THE SCIENTIFIC METHOD OF THINKING

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An
Introduction to
Dialectical Materialism

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FOREWORD

THIS volume does not pretend to be a complete textbook, dealing systematically with all aspects of scientific method. It contains a series of essays about those sides of scientific method which are usually neglected and which have recently received special attention from the philosophical movement known under the name of "dialectical materialism." While avoiding this clumsy term in the interest of clarity, I cannot avoid the contributions which representatives of this school have made to scientific method. This philosophy states, among other things, that the world is full of contradictions. When writing this book I was confronted with one of these contradictions, namely the task of representing an essentially unpopular subject in a popular form. It would be a miracle if I had not sometimes been too simple and sometimes too involved.

The help of my wife has been invaluable in the preparation of this book.

Miss Ellen Wilkinson and Dr. Kershaw have kindly read through the whole manuscript and improved it on every page, sometimes rewriting whole pages. Valuable suggestions were made by Professor Levy, Mr. Archibald Robertson, Mr. Edgar Duschinsky, Mrs. Blanco-White, Dr. Bernal and Mr. J. P. M.

Millar, the General Secretary of the National Council of Labour Colleges. These persons, of course, do not share in any way the responsibility for what I have written.

E. C.

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CHAPTER I

THE NEED FOR METHOD IN SOCIAL RESEARCH

OVER the reading drum the electric needle quivers; keen-eyed writers make marks on maps and plot the charts which show the state of electricity in the atmosphere thousands of miles away. The cathode ray which is the needle, by making possible the reliable forecasting of the weather, has helped in rendering aviation safe. It would seem a miracle; actually, it is the product of the patient investigation of facts and the achievement of marvellous precision in the making of the electric-recording machines. It is the result of the smooth co-operation of vast organisation.

Walk through a modern automobile factory in America. As many as 150,000 workers can be employed here under one direction. The production line, which in forty-five minutes assembles the parts of a car ready to drive away, is a marvellous combination of human skill and mechanical device, made possible only by a colossal co-operative effort. But outside the factory the lines of hungry men fight for jobs, and you will see there but one sign of the social chaos of any one of the mushroom automobile towns of America, of lack of planning which, if reproduced in the factory itself, would reduce it to a mere tangle of twisted metal in a few hours. And nobody seems to know what should be done about it.

Why not summon the economist as the laboratory summons the scientist and the factory summons the engineer? Even to suggest this solution in these days of crisis raises laughter in any gathering. For the men whose job it is to know are as helpless before the facts of the crisis as the man in the street himself. Just at that period when careful and cool scientific analysis of the facts is of utmost importance, emotional controversies range among the various schools of economists. The harassed business man, the worried statesman, the trade union leader, with the responsibility of millions of livelihoods thrust upon their shoulders, look in vain for precision and reliability in prediction. They know not how to sort the true findings of economists from their numerous wrong diagnoses and predictions. Whilst the scientist can readily forecast the variabilities of the once unpredictable weather, the banker raises his hands in despair when asked about the future movements of gold, which are entirely dependent on human agency.

The economist however, will retort that it is just this factor of human agency which distinguishes his science from, say, that of the crystallographer. The variations of crystals are not infinite. A steady recurrence of phenomena can be relied upon. There are laws. But suppose an economist in 1933 had been asked to foretell the probable average price in 1935 of such an innocent and apparently simple commodity as pepper. He could not foresee that some speculator would conceive the idea of a pepper pool; that simultaneously the great nations, forced along the road of quick re-armament, would need quantities of pepper

as an essential constituent of certain poison gases. Even if it had been possible to foresee such events, how could an economist be expected to guess that the clever mind behind the pepper arrangement would not have the connections necessary to draw the credit from the banks, and that the armament firms would be strong enough to resist his levy on the pepper they needed? Therefore many economists draw the conclusion that what has no laws cannot be explained; it can only be described after it has happened.

The diagnosis of economists is too obviously guided by what they hope will happen to social groups in which they are interested. The orthodox economists have made of their science a subtle apology for the present system. They tend to underrate the severity of each recurring crisis, and in face of the cyclical recurrences show a reluctance, if not a refusal, to admit that these periodic crises will also in future remain an essential feature of the capitalist system. On the other hand, their opponents tend to overrate the effects of the crisis and discern in each one the collapse of the whole capitalist system.

The development of economic science and the large sums spent on research have done nothing to ease the crisis. Despite the joyous predictions of prosperity-drunken economists, 1929 saw the beginning of a crisis which proved the largest and most severe since 1847. During such a crisis the bulk of economists fail to see its deep causes and cannot plot its probable trend. They are therefore unable to suggest how to overcome it. If a tramcar stopped working, the advice of any skilled engineer would be the same as

that of any other skilled engineer; if our economic system stops working, the advice of each economist will be different from that of any other, and we remain as unadvised as before. To call a "brain-trust" of trained economists to advise on "steps to end unemployment" has proved as effective as hiring witches to stop an epidemic, even when their advice has been followed with pathetic care. The engineer in time of difficulty can cure a fault; the economist at a time of social catastrophe can only be relied upon to prove that it should not have happened or that it will not happen again.

On the other hand, the hopes of the opponents of capitalism force them to see in each crisis the final collapse of capitalism. Mr. James Maxton, M.P., remarked in a speech in August 1931: "They may postpone the collapse for a month, two months, three months, six months, but collapse is sure and certain." H. M. Hyndman and his fellow-socialists during the nineteenth century were confident at every crisis in the industrial situation that the millennium was ahead. We can readily see to what extent wrong theories are bound up with wrong actions. The policy of the Communist International after 1922 was based on the assumption that the post-war crisis of capitalism marked its final collapse; it led the working-class movement from disaster to disaster. Because in 1931 the leaders of the I.L.P. believed that the final collapse of capitalism was at hand, they separated from the Labour Party and their own disintegration from that moment was rapid. Because, on the other hand, from 1929 the Labour Party hoped against hope from month

to month that the crisis would end, its leaders clung to office and two years later went down to disaster.

Of course, it would be exaggeration to say that there is no scientific knowledge whatever of the laws of crisis. Too much is at stake. The holders of the biggest fortunes at last are learning that everything cannot be left to blind chance and to the gambler's throw. The Rockefeller combination maintains a costly fact-finding organisation in the world's markets. Pierpont Morgan is said to have come through the Wall Street crash relatively unscathed, through the advice of a heavily subsidised economist. But the fact that the results of such research are treated as valuable secrets (as indeed they are) is in itself of the greatest significance. That this knowledge is not in the possession of those who can use it scientifically for the benefit of the community, instead of for private gain at the expense of the community, is in the main due to the unscientific way in which society is organised.

Politics—the science of organising the State—is in as unsatisfactory a condition as the science of economics. A successful Austrian statesman defined politics as the art of representing one's personal interests as the interests of the community. In a democracy almost anything decides the election of a candidate for the legislature except his personal fitness for the work of legislating. Statesmen have been known whose hands have been placed on the driving-wheel because of some amusing personal idiosyncrasy, or even because they were the worst available candidates and thus aroused no jealousy. The making of a party pro-

gramme is usually an affair of balancing rabble-rousing slogans with the personal interests of the groups behind the policy, rather than an attempt at a serious task of social engineering. Nor does the electorate believe that any government even tries to work out its policy in practice. The task is entrusted to elderly men badly in need of a rest. The average age of a British Cabinet Minister is always above 60. In order to include the new generation, the men between 30 and 45, a whole revolution is necessary, as in Italy, Germany and Russia. In France trade is hampered by continual political crises. In the U.S.A., the presidential elections have the same detrimental effect, and from 1929 to 1931 nothing could be done to counteract the crisis because of the sense of insecurity created by the prospect of a new election.

Merely to catalogue the absurdities accepted in a society that has so much scientific equipment but refuses to admit the need for scientific reorganisation, of itself produces the effect of a nightmare.

Wars occur at certain intervals; millions of young men are exterminated in their prime; millions more are crippled, physically and mentally; poverty, malnutrition, starvation even, become the lot of masses of the civilian population. Nor does peace bring much relief, for the cost of immediate preparation for the next war lowers the standard of living and prevents the adequate development of social services. But with all this extensive preparation, not even war can be planned and scientifically organised by people conditioned by such chaos. The writings of Lloyd George and of many generals of the last war have proved that.

The institution of private profit and the insistence on the rights of private property prevent the utilisation of the scientific achievements of our age. While inventions have been made that render possible a far higher standard of living for all, vested interests in private rights produce poverty in the midst of plenty. Recently we heard on the radio that scientists had discovered an ideal material for clothes and building; it cannot be used only because it is *too cheap* and would upset the rights of property in consequence. Every year 6,000 persons are killed and 80,000 injured on the roads of Britain; though landowners can no longer insist on quite the fantastic compensation with which they strangled the railways years ago, the cost involved in buying them out prevents the proper planning of adequate roads, especially in the heavily over-built urban areas. No government is allowed to more than touch the fringe of the slum problem because of the tribute that must first be paid to the owners of land and money, and because of the "rights" of the private builder. Because water provides no opportunity for private profit, the lack of planning produced in 1934, in a country where it rains half the year, a drought which brought much inconvenience to the town population and real suffering in rural areas. The damage done by rats is estimated at more than £50,000,000 a year, but nothing effective is done against them; the smoke plague also can be removed only by collective action, but its removal rather decreases than increases the profit of the factory owner, and the smoke damage to the health of the population goes on but little checked.

The unique facilities which the Empire offers for emigration cannot be used. In 1931–32, in years when Britain had two million unemployed persons at least, only 48,000 emigrated, whereas, in the same years, 107,000 immigrated from the Empire into the United Kingdom. Wise economists have explained this by showing that it does not pay to emigrate, that from the interest on the capital necessary to settle a family in the large agricultural areas of the Empire the family could live as well in London.

Great suffering is brought to many members of our society because the various structures of that society do not move with equal speed. In our industrial civilisation the divorce laws are still mediæval. So also the system of treating criminals, where the mediæval idea of revenge is still in conflict with the modern idea of improvement, and the prisons deteriorate criminals as much as they improve them. The persistence of scholastic ideas in education is responsible for the mind-wrecking processes that take place in our schools and for the ill-health resulting from over-education.

To all this correspond the unscientific habits in thinking about social and political subjects. As Graham Wallas, the great exponent of political science, has expressed it: "Looseness of thought and language on the subject is taken for granted." Most readers of this book will know the columns in *The New Statesman* headed "This England," which contain the week's stupidities from the Press about social subjects. It would be quite impossible to compile any similar page of remarks taken from writings about the natural sciences.

History, even though it deals with times that are past and events that are known, is even yet regarded more as a vehicle for the conveyance of emotions than as an objective science. The nearer the professional historian comes to present times, the more insecure he feels. He declares that he needs "distance" to see clearly and objectively. He admits that he does not understand the present time, and his shortcomings become more obvious the nearer he approaches it. One hundred years ago the great Lyell put geology on a scientific basis by stating that the same laws had always operated which operated to-day. He used the present to understand the past. We still await the Lyell of history who will consciously make to-day the key to yesterday. As it is, if, with even a small experience in political life, we approach the descriptions historians so often give of the past, we see at once that things at any rate could not have happened in that way. Historians usually have no conception of what is inherently possible or not, of what is likely or not. Later on we shall return to this point.

Some historians have even despaired of a scientific study of history. They have maintained that history has no laws and allows of no generalisations. This implies an admission of the bankruptcy of the historian.

Methods and Facts

Whence does the science of nature derive its superiority over social science? One of the causes would seem to be that, whereas the investigation of society

is still lacking a method, natural science has been guided by a method for some centuries. "Method" in Greek means the path or way by which we come to a certain goal; a conscious and orderly way of doing something. Method means the definite and regular scientific procedure by which we come to certain results concerning certain fields of research. A method is a way of planning, organising and ordering our research and thought. Social science is not only *lacking* in method; some authorities, like J. S. Mill, have even assumed that it has no method of its own, whilst others, in more recent times, have assured us that method would only cripple social research, would make the investigator narrow-minded and dogmatic.

Method is a technique of collating and ordering facts. The English mind apparently revolts against the contention that method is of any use. Frequently we hear it said: "What is the use of a method? Only facts count in science. We need facts, not your philosophical eyewash." Everybody, in fact, has met the man who continually refers to "facts," not to any particular fact but to facts in general; that is, the man who always speaks about facts, never mentions one, and regards Newton's law of gravitation as a fact, whereas it is obviously a hypothesis. Many observers agree that the English mind is specially inclined to this sort of thinking. As Emerson expressed it: "Impious in their suspicion of an idea, they lick the dust before a fact." Or, to quote Bishop Creighton: "An Englishman not only has no ideas, he hates an idea when he meets one."

Of course, science can do nothing without a sound basis in facts. The question remains, however, as to whether facts alone are sufficient for science. This question is best answered by looking at the way in which science actually grew and constituted itself, by looking back to the time when science was not so firmly established as it is to-day.

Some Historical Observations

No student of the history of thought can fail to be struck by the vivid interest which scientists took in questions of method three hundred years ago. The first half of the seventeenth century was the period when, after the authority of the Middle Ages in questions of thought had finally collapsed, the foundations of a new science were laid. An enthusiasm, new, fresh and irresistible, had just begun to discover the prospect of a new progress in the welfare of mankind which would ensue from a development of science and technique.

It would be mistaken to assume that the pioneers of modern science, that Bacon, Galileo, Descartes and Robert Boyle merely roamed at random through the world collecting odd facts. Descartes insisted that the scientist would get nowhere if he behaved "like a man who was devoured by so insensate a desire to discover a treasure that he incessantly ran through all the streets looking whether some traveller had not dropped one." These pioneers were anxious to understand the method by which facts can be discovered, interpreted and represented.

Between 1600 and 1620 Bacon wrote his *Novum Organum* in the spirit of his remark that "the lame man who keeps the right road outstrips the runner who takes the wrong one." Galileo, in 1623, published his book on method, *Il Saggiatore*. In 1637, Descartes preceded his three essays on optics, meteorology and analytical geometry with the famous *Discourse on Method*, in which he gave "safe and simple rules for the discovery of facts." Spinoza's tract on the *Emendation of the Intellect* (before 1660), the *Logic* of Port Royal (1662), and Robert Boyle's *Sceptical Chymist*, completed this amazing and unique galaxy of writers on method.

The end of this period is marked by the foundation of the Royal Society in 1661. After the new rules of method had been discovered, the Royal Society organised patient research on these new lines. It met with the hostility of the universities and of the divines, who assailed this research with ridicule and fierce abuse. The members of the Royal Society "can admire nothing except fleas, lice and themselves." The main grounds of criticism were the lack of immediate practical advantage in their studies and the gross irreverence of spirit shown by investigating the secrets of nature, which should be humbly accepted without question.

In the scientific world, however, the new method was firmly established by the time the Royal Society began its work. Only fifty years later, in Newton's time, the new ideas had become so familiar and so much a matter of course, that Newton could say that he needed neither theories nor hypotheses. The study

of method was pursued. But it acquired a new function. Whereas until then the science of method had led and guided research, it now began more and more to copy and to restate the existing procedure of research. This is the function which the science of method acquired in the nineteenth century, with Mill, Bain and Whewell.

Method in Times of Crisis

What generalisation follows from these historical observations? Some periods in the history of science are periods of crisis, are periods when the very foundations of science become insecure and begin to shake; in such times people will ask questions regarding the most general aspects of things, concerning not only the way of looking at particular things, but the way of looking at things in general. Philosophers will be of high repute. At least, Descartes and Spinoza were taken so seriously that they were persecuted for their views; the ideas of our modern English philosophers are buried in the beautifully printed volumes of highly respectable publishers. Investigations, combining a survey of many fields of knowledge and terminating in the discovery of a new universal method, must play an important and leading part in the development of scientific ideas. In such times the words of Leibniz are felt to be true: "There is one thing more important than the most beautiful discoveries, and that is the knowledge of the method by which they have been made."

In any given field of investigation, once the method

has been discovered and firmly established, the facts assume principal importance until the method has exhausted its possibilities. Method is an instrument. After the knife has been forged, the cake of facts is cut with it, so long as the cake itself lasts. In periods when the foundations of principles of scientific ideas seem to be stabilised, philosophy and methodology will occupy an inferior place. This was so in the nineteenth century, and during such times philosophy ceases to be taken seriously. It is reduced either to profound but empty speculation, or to the subordinate task of restating and "unifying" the results of the special sciences, of making up their incomplete results into a seemingly complete system. Philosophers may become absorbed in a reconciliation between the results of mechanical science and the demands of religious belief and moral consciousness. In any such event they lose the leading role which they played in times of crisis.

There can be no doubt that at the moment we are going through a period of social and scientific crisis. In England, the nineteenth century was a period of boundless belief in the possibilities of progress through the control of nature. The men of the day did not foresee that their successors, after having obtained their power over nature, would not use it for their own good. They thought that social progress would raise mankind "above the gulf of wretchedness and want." To-day we begin to be afraid of the blind forces we have let loose. Only the control of society can bring the broomstick back into our power. As the methodical understanding of nature preceded the control of

nature, so the methodical investigation of society must precede the control of society.

Once More about Methods and Facts

It is not as new-born babies that we look at facts. We have preconceived ideas about the results which we expect. The scientist cannot dispense with preconceived ideas. He is wiser than others in that he does not believe in them until they are confirmed and verified.

A crude fact is not scientific. It becomes scientific only if it has a proper place, if it can be brought into relation with other facts, so that new results arise or old ones are improved. Frequently science discovers by chance facts which, at the time, cannot be interpreted, which therefore teach nothing to anybody and remain isolated and sterile, taking no part in the living history of science. Robert Boyle observed the action of electricity in the boussole. Because Boyle was unaware of the existence of the electrical current, to him the observation remained sterile; he could not bring it into relation to anything else. Only a hundred years later, in the hands of Ampere, could this fact become a fertile and a fully grown scientific fact, the basis of the science of electro-magnetism. Boyle also observed that silver chloride became black when exposed to light. But he did not understand the fact; he could not see its cause, nor how it operated. Only two hundred years later could the fact be understood and then put to practical use in photography.

In the sixteenth and seventeenth centuries numerous

fossil plants and animals were discovered. Their existence was a fact. The fact did not contain its own interpretation. Biblical accounts of the age of the earth had closed the minds of scientists to the correct explanation; to them these fossils simply could not be the remnants of formerly living organisms, and they preferred the most extravagant speculations to this explanation. They suggested a plastic force by which the Earth, perhaps with the help of the stars, produced "imitative forms" resembling true organisms. But we have no reason to disparage Fallopsio, Mercati and others of their calibre, for our own minds are just as continually closed to the obvious interpretation, as our successors will see three hundred years hence. The "struggle for life" is a fact and "evolution" is a fact; but it is a theory, and a very doubtful one, that the struggle for life is the *cause* of evolution.

The history of the controversy about the inheritance of acquired characteristics shows that it is easier to worship "facts" than to ascertain them.[1] The science of method is the science of the relations which we may expect to find between the facts. The relations between the facts are as important as the facts themselves. Ideas as to where these relations may be are as important as facts. A science is no more a heap of facts than a big house is a heap of bricks. There have been naturalists in the chairs of our universities who collected as many or more facts than Darwin did, but it was because Darwin had also magnificent ideas that he is regarded as a supreme scientific genius, whilst the others dwindle in comparison. The pioneers of modern

[1] J. B. S. Haldane: *The Causes of Evolution*, 1932.

science brought certain ideas with them, elaborated by the nominalist school, which they then put to the test of experiment and observation.

The Limits of Method

Of course, method can do nothing without sound knowledge of the facts and some common sense. Scientific method can be called a codification of common sense. Common sense is a faculty which is more or less common to all men. Scientific method is therefore more or less accessible to all men.

Naturally, without a certain amount of inspiration and imagination, creative mental work is impossible. Newton's "passage from a falling apple to a falling moon" was a stupendous leap of the imagination. Method cannot be expected to create a genius out of an ordinary man. A book on scientific method cannot promise to transform the village idiot into a second Aristotle.

Business men, journalists and statesmen are led by "instinct" to sensible decisions. They speak of an "instinct" for bargains, a "nose" for news. They can rely on these because the general rules of the game are known, because they are not pioneers. Bacon has been much attacked for a passage in his *Novum Organum* in which he says: "For my way of discovering sciences goes far to level men's wits and leaves but little to individual excellence; because it performs everything by the surest rules and demonstrations." Lord Macaulay and many others since Macaulay have jeered at this presumption. They could not see that

after the method of natural science had been established the investigation of nature has largely become a collective enterprise, carried on mechanically by tens of thousands of persons, mostly ordinary men of mediocre minds.

Method needs imagination in order to become fertile. Imagination needs method in order to be directed. Fertility of mind cannot be acquired by method, but method can guide the fertility of the mind and use the existing faculties rather than wasting them by trusting to chance.

CHAPTER II

THE HISTORICAL ORIGIN OF DIALECTICAL MATERIALISM

TO most people in this country the term "dialectical materialism" has only become known during the last few years. They tend to imagine that it is something entirely new, and they at once associate it with Bolshevist Russia and the Five-Year Plan. Now it is actually true that the Five-Year Plans, in so far as they are successful, are a gigantic attempt at a practical application of dialectical materialism to social reality. But, on the other hand, the theory of dialectical materialism dates back almost exactly one hundred years. It was, in fact, in the eighteen-forties that Marx first began to expound it.

Some Words about Marx

When a well-meaning friend of mine heard of the plan of this book, he at once exclaimed: "Say what you like, but don't say that you got it from Marx."

Recently an Indian was preaching the Gospel of Islam in Hyde Park; he drew a large crowd. Near him stood some Christian sect which had no audience, but when I moved towards it, one of its number addressed me in deep-felt indignation: "We need no foreigners to bring us their 'isms' and religions. We have our Jesus Christ." I did not stop to enquire the nationality of this Jesus Christ. Much the same mentality found

expression in a cheerful remark by Lloyd George, when he said that he had no objection in the least to socialism, but why should we take it from a dreary old German like Marx and not from a decent Welshman like Robert Owen? On the one hand, anti-foreign bias and disgust with the whiskers of Karl Marx; on the other hand, faithful pupils who take him not as a guide but as a God. No reputation can stand this double assault.

The Power of Genius

The perusal of any ordinary history of philosophy would make it easy to believe that a philosophical theory is born just when and just because some extraordinary genius has decided to invent it. Actually the genius has the same function at the birth of a new idea as has the midwife at the birth of a child. That is why Socrates, one of the founders of philosophical thought in the West, called himself the midwife but not the father of his ideas. But Socrates did not share the megalomania of some of his successors, who claimed to create ideas as God is supposed to have created the world.

Theory is sound in the degree in which it is objective. Each theoretician adds to his objective findings a number of personal and individual idiosyncrasies which have no special value and are not shared by the more intelligent of his followers. The fate of psychoanalysis is a case in point. Any worth-while theory originates from the combination of a number of objective circumstances. So also did Marxism.

Three sets of circumstances had to come together in

order to bring forth the modern science of a universal method. This chapter tries to convey to the reader the feeling that the scientific method, in what it owes to Marxism, is not the fruit of the arbitrary whims of some individual, but an outcome of the main currents of modern civilisation. It is because of this fact that Marxism has retained its vitality and proved to be a perpetual and inexhaustible source of instruction for one part, and annoyance for another part of the public. Dialectical materialism combines contributions made by each of the three classes of society. The philosophical tradition of the capitalist class entered into its materialism, from the aristocracy it took over its dialectics, and the working class, finally, furnished the theory with its purpose and driving force.

Bourgeois Materialism

The German commercial and industrial classes grew steadily in numbers and influence during the first half of the nineteenth century. They were forced to live in a state that was governed by the feudal aristocracy, by the Junkers. The State crippled their free development. The commercial and industrial classes thus became rebellious and began to nourish the spirit of revolt against the feudal and absolutist State. Whenever the commercial and industrialist classes have become revolutionary we can make the curious observation that one section of them have tended towards a materialist philosophy. We need only to think of Overton, Mandeville and Hartley in England, of Diderot, Lamettrie, Helvetius and Holbach in pre-

revolutionary France, and of Herzen, Chernychevsky and Pavlov in pre-revolutionary Russia, to illustrate this point. In Germany at the time of which we have been speaking, Ludwig Feuerbach expressed the ideas of this fraction of the revolutionary bourgeoisie.

Among those terms of philosophy which through long and varied application have become vague and have lost as much of their individuality as an early Victorian shilling, "materialism" is one of the worst victims. "Materialism" is usually defined by some rather nebulous and uninteresting statement that "everything is matter" or that "everything can be explained by 'material' causes." But materialism gets its historical drive not from this almost meaningless metaphysical pronouncement but from assuming a certain practical attitude towards the world. It is a certain mode of life and a certain mood of the soul, which obviously varies from time to time and from place to place.

There is no reasonable and straightforward answer to the question "What is materialism?" no more than there is to the questions "What is Buddhism?" or "What is Christianity?" We can only ask a more concrete question: "What does materialism mean for the theoreticians of the rising commercial and industrial classes?" Their conception of materialism has little in common with that of the Greeks and Romans who sought for refined pleasure and quiet contemplation in the gardens of Epicurus, or with the materialist theories expounded in the castles and jungles of India by Machiavellian kings and heretical ascetics.

Materialist ideas were intended to defend the necessities of modern industrial development against encroachments by the Church. In a double way was the Church an impediment to industrial development. As one of the big feudal landowners, the Church was interested in high prices for agricultural products. The industrialists were interested in low prices; they were thinking of their wage-bills. Also, the Church stood by serfdom, and serfdom kept down the number of free workers available for industrial production and reduced the purchasing power of the home market. Further, the Church accumulated wealth, which was withheld from industrial production, and it kept people in "idleness" as monks and nuns, and by extensive charity to the poor. The majority of industrialists and tradesmen were content to change the Church until it had become a church according to their own heart. Some went further and became suspicious of religion as such; these were the materialists. They were reinforced in their position by the considerable obstacles which the Church put in the way of that scientific and technical progress which is the very life and soul of a capitalist economy. The "warfare of science with theology" gave the main impulse for more or less consistent materialist ideas. The cult of science replaced the reverence for a Divine revelation. The progress of science led to the conviction that everything in this world proceeds in quite a natural way, exactly as our machines function, without the unfathomable interference of supernatural agents, not especially mysterious, calculable and measurable. Theological explanations vanished from one branch of

science after another. God lost the place He occupied in the core of each reality. He was, perhaps still is, tolerated as an emotionally pleasant ornament of a mechanised world.

At the same time, life acquired a new meaning for this class. Success, material success, hard cash became its purpose. Life in this world became the real life. Only the poor are put off to the world beyond, but the merchant, while successful, makes the best of his life in his present existence. In the theoretical sphere, this involves an alteration in the purpose of knowledge. We do not acquire knowledge to save our souls but to fill our pockets. We use it for the "commodity of human life," as Hobbes expressed it. Knowledge is used for the task of controlling the world. As Hobbes remarked also, and as the Pitman Institute reiterates, "The end of knowledge is power."

Marx shared the materialist way of looking at things which is common to most people of our civilisation, though it rarely finds expression in philosophical systems. His materialism differs from bourgeois materialism in a twofold way. Marx thought that the community should not gain control over the forces of nature in the profit interest of some specially lucky individuals, but in the interest of the community itself. Secondly, his opposition to religion is more radical than that of his predecessors. Bourgeois materialism never totally rejected religion; religion had to be preserved for the people and the masses. Marx *does* reject it totally, because he saw that it helped in keeping the masses contented. Bourgeois materialism was a weapon in the struggle of the

commercial classes for power; Marxist materialism is designed as a weapon for the emancipation of the working classes.

Dialectics and Aristocracy

In 1831 there died in Berlin from the cholera one of the greatest philosophers of modern times, Friedrich Wilhelm Hegel. With the other summits of philosophical thought, with Aristotle and Spinoza, he shares the fate of being inaccessible to the general public. He is widely known through apparently meaningless speculations regarding the Absolute and "thesis, antithesis and synthesis." The obscurity of his style has been the object of much ridicule, and his works are, in fact, models of how books should not be written. But under all his cumbersome and mystical formulæ, under his glorification of absolutist Prussia, which he regarded as the freest and most perfect state possible, Hegel had hidden a most precious and wonderful instrument, the *dialectical method.*

Dialectics is that way of thinking which works with the assumption of a unity of opposites and of the reality of contradictions. Until 1830 all dialectics had been discovered by aristocrats in a romantic mood. I speak of aristocrats here in the wide sense in which this word denotes a ruling class which derives its income mainly from agrarian production and is antagonistic to the commercial and industrial classes. The romantic attitude of this group found its philosophical expression at various times and in various places, in the dialectics of Zenon of Elea and Platon, of Shaftes-

bury, of Fichte, Schlegel, Novalis, Coleridge and Hegel.

The popular Press uses the term "romantic" to describe the experience of some individual who has shunned the commonplace safety of middle-class existence, has lived remote from the ordinary experience of the readers of the paper, has led perhaps a life of adventure and so captured the imagination. But scientists use the word as denoting a rather ill-defined movement which swept for eighty years through the main countries of Europe. This movement was, however, quite clear in its negative aspects, purporting to be a reaction against the spirit of enlightenment, a return to the ideals of the feudal Middle Ages, to the spirit of chivalry, adventure and wonder.

We must now go one step further and beneath the literary meaning discover the underlying social significance of the "romantic" movement. A romantic is a person who opposes the tide of his time. Don Quixote is the prototype of all romantics; in a society which had settled down to commercialism the Hidalgo of La Mancha dreamt of reviving the chivalry of a feudalism which had ceased to be a social reality. The flight from the utilitarian reality of an industrial society into an uncritical glorification of the feudal Middle Ages, as we should wish them to be, is one of the main elements of romantic feeling. The inner life of the romantic is not in accord with the external circumstances of the society in which he lives. An unfathomable discord arises in his being, a sense of tension and distress, a war within himself, which makes him attentive to opposites and contradictions,

and to their unity and reality. In this way romantic thought has laid the foundations of dialectics. Marxism, whose revolutionary conflict with existing society brought it into a position often emotionally and temperamentally similar to that of the romantics, could take over substantial parts of their thought.

Working-Class Socialism

The third factor which contributed to the formation of the new way of thinking was the socialist movement of the working classes.

The recent rebellion of the workers in Spain called forth the usual comments in the Tory press: "alien agitators" were said to have stirred up those contented, well-fed miners of the Asturias and led them astray. No revolutionary outbreak is known that has not been attributed to those "alien instigators." The Russian Bolsheviks themselves have recognised the use of this legend: in cases of plots, wrecking, sabotage and terrorism, they are not satisfied until they find some alien capitalist or consul who had instigated an otherwise decent Russian citizen. Or, as Hitler said when the Reichstag burned: "Lord, grant that no Germans are involved in this crime!"

The same Hitler had earlier discovered that the working classes of Europe were quite contented until the Jew, Marx, by his demoniac powers roused them against their benevolent masters. Now it is plain common sense that Marx found already quite a number of rebellious workers before he started his activities. Without these rebellious workers, with all his clever-

ness and reasoning capacity, Marx would probably have become a barrister and not a serious thinker. There are super-clever persons who maintain that Marx was not in the least concerned about the working class and that he looked on them as one looks upon a butterfly stretched upon a pin in the Museum. The entire life and activity of Marx belies this statement.

Socialist groups and even mass movements were in existence already when Marx began to work. They were a necessary consequence of the industrial revolution which quickly changed the face of England and France. Machinery, raw materials and workers had increased rapidly.[1] The census of 1841 counted 2,000,000 male industrial workers, 500,000 of them employed in the cotton industry.

The socialist movements were the natural and inevitable consequence of the abominable social results of this industrial progress. The hardships of the workers in factories and at home, the ruin of two generations of working-class children, the degradation of human dignity and health, all this found political expression in social movements which attempted to offer a better solution to the new problems of indus-

	Coal. (million tons)	*Pig Iron.* (thousand tons)	*Cotton.* (million lbs.)
1720 ..		25	1.9
1764 ..			3.8
1780 ..		40	6.7
1788 ..		68	30.0
1800 ..	10		56.0
1806 ..		244	
1830 ..			263.0
1840 ..		1,390	592.0
1845 ..	34		
1847 ..		2,000	

trialism in what Owen called a "rational system for the organisation of society." Working-class radicalism assumed the character of mass movement in the Spenceans of 1816, in Owenism from 1830 to 1834, the Chartists of the 'thirties and 'forties, and in the drive for trade unionism. In France, under Blanc, Blanqui and Proudhon, after 1830 a large and articulate working-class movement arose.

By joining them in their struggle, Marx came out of the isolation of a merely theorising and book-writing individual to become a serious thinker of much consequence.

In this way he acquired the social basis for the new method without which it would never have become a social reality. The modern science of nature also needed a social basis. It found it in the modern bourgeoisie and the necessities of industrial production and progress. The owners of industry can never, however, be the social basis for a rational system of society, because they are, as we shall see later, its main obstacle. They can only lose by rational reconstruction, and no social group can be expected to work against its own interests. The working classes can only gain by rational reconstruction. From the desire of the working classes—in the wide sense of the term, as meaning all those who live mainly by their work—the new method gains interest in and fervour for a rational system of society. Without a desire for the control of nature by a *social group*, no science of nature could have developed. Without continually being reinforced by the desire of a group for a rational control of society, no science of society is possible.

It is this desire which is the driving force of scientific method and this can only come from those who derive their income from work and not from property or ownership.

The Originality of Marx

All these factors, real and ideal, met in the mind of Marx and created "dialectical materialism." The originality of Marx as a thinker has been much disputed. In Germany dozens of people owe their university degree to yet another complacent proof that Marx was not an original thinker, that each of his statements has been made before. They believed thus to have proved that Marx was no good. They were apparently ignorant of the fact that not one idea propounded by St. Augustine, Buddha, Lessing or Kant, has been found to be without precedents. Darwin proved the same for himself in the "Historical Sketch" which he prefixed to the sixth edition of his *Origin of Species*. The power of genius does not consist in making unheard-of pronouncements. It is a synthetic power of bringing into unity one-sided views of other thinkers. The objective mind makes discoveries which are socially necessary.

Marxism was the synthesis of the ideas of all three classes of the time. It owes its dialectics to the aristocracy, its materialism to the bourgeoisie and its interest in the rational control of society to the working classes. Each class sees one part of reality. Scientific method can unite them into a total view of the world if it is carried on by those who work and therefore are capable of a total domination over the world.

CHAPTER III

THE FOUR LAWS OF SCIENTIFIC METHOD

SCIENTIFIC method studies the most general laws of thinking and of reality. It is concerned with those factors in thought and reality that are common to everything. It discusses those aspects and laws of the world which can be discerned in every reality and in each event.

In consequence, the four laws or rules of scientific method, seen in themselves, will strike the reader as being in the nature of rather bald statements. The vitality of a method lies in its application, and only in its application can its meaning and significance be truly grasped. We make the worst conceivable use of these laws if we petrify them into mystical formulæ from which we can easily deduce reality without further examination. There are people who, because they have once studied the dialectical method, believe that they have nothing more to learn. One such person once applied for a post as an organiser; asked in what way he would organise his district, he replied, "Apply the dialectic." He was not appointed.

In certain respects, method and application are one and the same, are inseparable. The method throws light upon the application, but it draws its life and nourishment from being thus used. Severed from the root of concrete reality, its sap dries up, it dies and rots.

There are some who have used the unity of method and application to conceal their incompetence in expounding scientific method; because the method is inseparable from its application they argue that it is impossible to give a separate account of it. But it is just the nature of scientific exposition to separate in thought what is inseparably connected in reality. In concrete reality the physical properties of a pulley or of colour are not separated from their mechanical, chemical, æsthetical or other properties. But nobody will deny that it is useful to treat them separately in a textbook of physics.

For a different, and in some respects more detailed, treatment of the subject matter I refer the reader to a series of articles which I wrote for *Plebs* from November 1934 to March 1935. Those who are familiar with current literature on dialectical materialism will notice that in the statement of the four laws of scientific method which follow, I have considerably reduced the number of technical terms. Some are indispensable for any specialised scientific enquiry. This chapter, which gives an explanation of technical terms, may not interest some readers. They are advised to look at the laws, proceed to the fourth chapter and return to the explanation of each term when they happen to meet it in later chapters.

The First Law

Think concretely, for everything is concrete.

The term *concrete* is used here in the technical sense and the reader must keep that carefully in mind. It is

impossible to open new fields of research without using words in a technical sense. A physician or surgeon has a different conception of "clean" from the ordinary person; the term "concrete" is not used here in the ordinary meaning, as the dictionaries give it. The technical use of the term, however, is sometimes clumsy. A writer in *The Patriot*, after quoting passages from an article of mine, seized this opportunity of being funny: "We have long been of the opinion that Marxists had concrete brains. These articles confirm our opinion. New ideas cannot penetrate brains made of such solid stuff as concrete."

We say of a man that he "thinks concretely" when he takes into consideration all the aspects of a problem which are relevant for a certain purpose. We use the term "unconcrete" to describe that species of thinking which omits important aspects or factors of the situation, or which argues on too narrow a range of facts.

People sometimes act unconcretely when absent-minded. When making tea, they may forget to put the tea-leaves into the pot; the tea-leaves are, however, an "important factor in the situation." Or suppose we wish to remove some dirt from a piece of cloth; if, unconcretely, we think of the dirt alone and employ chlorine as a dirt-remover, the dirt will certainly be removed, but we have overlooked the effect of chlorine on the tissue and we will find it destroyed. To take a different example: when motoring became popular we began to make beautifully metalled roads; but this produced one unexpected effect—the tarry materials from the roads washed into the rivers, fouled them and poisoned the fish. New measures are having to be

taken to prevent this damage. By omitting to take into account the poisonous effect of these tarry materials and the possibility of their getting into our rivers, we were acting unconcretely.

Concrete thinking is adequate thinking: adequate both as regards the subject matter about which we think and as regards the purpose for which we think. It is a common tendency to escape from concrete research into easy and superficial generalisations and stereotyped formulæ. These tendencies all lead knowledge astray from its aim of greater control. Concrete thinking gives control; unconcrete thinking leads to failure. Mr. Oliver Stanley's Unemployment Bill of 1935 was an example of unconcrete and muddled thinking. Only the test of practical application allows us to distinguish between concrete and unconcrete thinking. In mere contemplative arm-chair philosophy there is no difference. We can be sure of our ideas only if we dare to carry them into practical life and attempt their realisation.

Concrete scientific thinking increases our control. It is this aspect which gives to scientific method its unemotional coldness which may repel many, the coldness of an instrument of precision.

The Second Law

Everything must be studied in its movement and development; for everything changes continually.

This law is clear in itself and needs no further elucidation. The progress of modern science has accustomed us to the idea of evolution. We are to-day

quite accustomed to observing and studying the stars and similar natural objects and all organisms in the process of their development; but we are more reluctant to apply this law to social events. In Chapters IX and X the reason for this reluctance and the fertility of the law in social science will be discussed.

The Third Law

Wherever we may find opposites we must look for their unity. Opposites are always in unity.

It is only with some practice that, much to our surprise, we notice how much the whole range of reality and thought is permeated by opposites. Usually we do not pay much attention to the opposites. But in this law, as in the others also, practice is everything, practice carried on indefatigably until it has become a mere matter of habit to seek for opposites in each of our problems and difficulties.

At this stage it is necessary only to give a short explanation of what we mean when we speak of "opposites" and of their "unity."

It is only when a child has reached between seven and ten years of age that he gradually learns to understand the relation of "opposition" between things and words. Adults, in almost all normal cases, know at first sight which things are opposed and which qualities are opposite. The discernment of opposites is one of the faculties of common sense. It is fortunate for this rule of scientific method that we usually know instinctively what opposites are. For philosophical disquisitions have as yet not terminated in a clear

unambiguous and satisfactory definition of this term.[1]

Normally we are inclined to assume that opposites merely exclude one another: what is black is not white; what is different is not the same; what is right is not left; and so on. Scientific method is aware that this mutual exclusion is not the whole truth of the matter. It insists on the "unity" between the opposites. Opposites not only exclude but also include one another, in some sense.

The term "unity" is used here deliberately for its very vagueness. It denotes a great number of different relations. The exact kind of "unity" that exists between opposites varies, of course, with their concrete nature. If this was intended as a complete textbook of scientific method, it would be necessary to give a full survey and classification of the different types of unity with which we may meet. This would require the sorting out of the different kinds of opposites.

In very numerous instances we find that opposites are inseparably linked together. Let us call the two opposites A and B. We then say that wherever we meet with A in a process or event, some manifestation of B will also be present. It would be inadequate to describe the process or event in terms of A alone. Where we meet love, we have also hatred; where the struggle for life, there also mutual help; where planning, there also anarchy; where class struggle, there also class harmony, and *vice versa*.[2]

[1] For a very good discussion it is worth while to read C. K. Ogden's *Opposition*, 1932.

[2] See *Plebs*, February, 1935.

The smallest particles of inorganic matter, the atoms, are composed of two parts with opposite charges, of the positive nucleus and the negative electrons. Only the attraction of the opposite charges keeps the electron together. Attraction and repulsion are both necessary properties of matter. To each attraction in one case corresponds necessarily a compensating repulsion in another place. Matter is the unity of both. The living substance is composed of two opposite elements, the male sperm and the female egg. Male and female qualities co-exist in each individual.

Opposites condition one another, as do object and subject. In history, economic factors and the "superstructure" of society (state, law, religion, science, philosophy, art) condition one another, are in a process of perpetual interaction. We have shown the same relation for deduction and induction (facts) in Chapter I, and for method and its application at the beginning of Chapter III.

We can speak of some opposites only in relation to one another, as of "cold" in relation to "hot"; of "this end of the road" in relation to "that end of the road"; or of "high "in relation to "low." The term used for this kind of opposites is "correlatives." Correlatives can be exchanged for one another if the standpoint is changed.

In another sense one opposite may be regarded as a special case of the other. Thus modern science regards rest as an infinitely small movement, equality as an infinitely small inequality, coincidence as an infinitely small distance. Curved and straight seemed for long

to be merely opposite, since either the direction of a line remains the same or it changes; in differential calculus, however, a curve is regarded as a series of infinitely small straight lines.

We shall illustrate this law by a careful analysis of the relations between *leaders and masses*, in Chapters V to VIII; we shall then discuss the unity of *truth and error* in Chapter XI; and finally the unity of *theory and practice* in Chapter XIV. These discussions will make it clear that there is nothing magical in scientific method. We cannot simply utter the words "unity of opposites" as a sort of "open sesame" and expect the treasures of wisdom to be revealed to us.

The Fourth Law

We must seek the contradictions in the processes of nature and society; for everything is put into motion by contradictions.

The word "contradiction" is here used in a technical sense. We must distinguish between contradictions in our *minds*, and contradictions in the real world of *nature* and *society*. The presence of contradictions in our intellectual operations is a sign of muddle and inconsistency. It is, for instance, an intellectual contradiction if, in a document, one sentence demands peace at all costs and the following sentence approves Britain's obligations under the Treaty of Locarno. The textbooks of logic define a contradictory statement as one in which we ascribe a property to an object and at the same time deny the same property to the same object; we commit a contradiction if we

affirm and deny the same thing in the same breath. The textbooks of logic give as an example: "The circle has four corners," or "The oak-tree has green leaves, but has no green leaves at the same time in which it has them." Such sentences are just nonsense. Who thinks a contradiction, thinks nothing at all.

In our actual thinking contradictions occur, but they are hidden. Some of them are due to conflicting emotions. On the Continent a public prosecutor once exclaimed: "The accused is a completely degraded man. I frequently saw him in places where I would have been ashamed to go."

It is a contradiction if a person should say: "I am deaf and dumb," or if a person, without intending insult, should call through the window to an unwelcome visitor: "I am not at home." In 1931 a German newspaper said: "In the Third Reich everybody will be *compelled* to do *voluntary* labour service." Another newspaper wrote: "The other fruits which England grows outside hothouses, mostly come from Germany, France, Spain, the West Indies and the Azores."

If intellectual assertions contain their own negations, they become meaningless. If things contain their own negation, they move or destroy themselves. We assume the presence of a material contradiction if we observe that something moves itself, that its movement is not entirely accounted for by external causes. I cannot dwell here on the innumerable philosophical problems which this statement involves. Ten years of incessant study have allowed me just to glimpse at the fringe of these problems. In Chapters XII and XIII we shall meet with cases in which social forms are

driven out of the state in which they are by a contradiction which forces them to change and to develop into something else.

Here I can give only the definition of a "material contradiction," to which the reader can turn again when he should meet the term later in the book. A material contradiction means *that one concrete process contains two mutually incompatible and exclusive, but nevertheless equally essential and indispensable parts or aspects.*

It is quite frequent that a person can have contradictions within himself, that he can turn against himself and tend to destroy himself and his own works. Often we feel the negation of ourselves in ourselves as a very part of ourselves. A boy should come to dinner but he remains upstairs, indulging an outburst of temper; his brother describes his behaviour by saying: "He wants to come downstairs, but he won't let himself." We shall see later that in social life the behaviour of this boy is more common than we imagine.

CHAPTER IV

WHY DIALECTICAL MATERIALISM IS SO LITTLE UNDERSTOOD

DIALECTICAL materialism has been hitherto little understood. Many are interested in it not for what it is worth but because others are interested in it. The feeling of uneasiness which it often provokes appears to have two chief causes: the shortcomings of the traditional accounts of the method, and the fear of its political implications.

THE CLASSICS

The existing expositions of dialectical materialism are not apt to create confidence in the new method. Marx and Engels laid the foundations of the new science of method. They applied it freely in their writings. The pressure of his journalistic work and of his work on *Capital* left Marx little time to elaborate systematically the method itself. Engels did more in this direction.[1] But on the whole the observations of the classics remain incomplete. Moreover, not all of them are yet available to English readers, being yet untranslated.

It has often been observed in the history of human thought that writers fall into neglect among the

[1] F. Engels: *Feuerbach; Anti-Dühring; Naturdialektik.*

generations immediately following them. The fate of Shakespeare, Cervantes and Kant illustrates the point, as much as the present attitude of advanced public opinion towards "Victorian" ideas. Something similar happened to Marx. While his socialist ideas spread and altered the face of political life, his scientific ideas and method were either neglected or misunderstood.

The dialectical method was cultivated by three groups of thinkers only. In Russia, where the strong tradition of Hegelianism and philosophical materialism created a favourable atmosphere, *Plekhanov*, the founder of the Menshevik Party, and *Lenin*, the founder of the Bolshevik Party, made important contributions to dialectical materialism.[1]

In England the tradition was preserved, although not developed, by some smaller socialist bodies. Ever since 1910, *Plebs*, the organ of the N.C.L.C., has published articles on the subject and numerous classes and lectures have been and still are devoted to it. The German working-class philosopher, *Joseph Dietzgen*,[2] attained here a popularity which was never his in his own country. His works would have had a much wider appeal had he expounded his ideas in a less difficult and unattractive fashion. In 1920 a working woman gave her impression of the lectures which were based on his works: "I felt sure that something valuable lurked behind this maze of unfamiliar words; one could but admire his (the lecturer's) enthusiasm, while

[1] Plekhanov: *Fundamental Problems of Marxism*, *The History of Materialism;* Lenin: *Materialism and Empiriocriticism*, *Aus dem Philosophischen Nachlass.*

[2] *The Positive Outcome of Philosophy*; also Fred Casey: *Method in Thinking*, 1933.

wondering a little at his taste."[1] Dietzgen has exercised a lasting influence on some of the most advanced members of the British working class. His influence, however, is not all to the good. His disciples often impress the observer by the laborious and ponderous way in which they express rather simple ideas and by a certain inclination to get lost in long discussions of purely abstract philosophical questions, as, for instance, "whether thought is an object or not." Nevertheless, many working-class students owe to Dietzgen their skill in the manipulation of ideas and in the scientific approach to the complex problems of our own day.

Finally, in order to complete this survey of existing literature, we must mention some individuals in the U.S.A., England and Germany, who carried on research in this field.[2] These individuals failed, owing to lack of collaboration, to work out a systematic and coherent account of dialectical materialism. They developed special problems only.

Russian Philosophy

The practical achievements of Communism in Russia have been so great as to divert attention from the barrenness and incompetence of original work in the philosophical sphere. It is true that the Russian and English communists have earned our gratitude for their splendid work in keeping the Marxist classics constantly before the public and thus feeding the fires

[1] *Plebs*, 1920, p. 60.

[2] Bogoslovsky: *The Technique of Controversy*, 1929. Sidney Hook: *Towards the Understanding of Karl Marx*, 1933. H. Levy: *The Universe of Science*, 1932. E. Conzé: *Der Satz von Widerspruch*, 1932.

of tradition. But their positive achievements, especially in recent years, have been rather disappointing, and, besides contributing nothing of importance to philosophy, have actually tended to bring their subject into disrepute, as witness the most recent productions of Rudas and Adoratsky.

What are the reasons for this unsatisfactory state of affairs? In the first place, for the satisfactory study of dialectical materialism some background of knowledge of other philosophies is necessary. Now philosophical works are only available with difficulty in Russia and their study is discouraged on the ground that since Marxism is the philosophy of the proletariat, all other philosophies are bourgeois (which is partly true) and therefore deadly mental poison (which is ridiculous). It is probable that in ordinary circumstances this prejudice would have been broken down, but such is the state of Russia that it is a paramount necessity for the best brains to be turned to scientific research of practical value, and philosophical studies, therefore, are confined to the less practical and intelligent.

There is, however, another and more fundamental reason for sterility. In casting out religion the Bolsheviks have elevated the fundamentals of Marxism to the level of a substitute religion. It is the essence of dialectical materialism that it must remain actively critical and adapt itself to the changes which it perceives in the world's course. The important thing about religion, on the contrary, is that its dogmas shall remain unchanging. The turning of dialectical materialism into a religion can only result in petrifica-

tion. It is no sign of progress that Pope Stalin, invested with infallibility, can sit with his College of Presidium-Cardinals in the Kremlin-Vatican and publish Bulls. Indeed, Bulls issued in such circumstances are likely to be more akin to the Irish animal than to the Papal one.

At the same time one must admit that there is some case to be made out for this attitude towards philosophy. A fluid philosophy is bound, by its very nature, to produce new trends of opinion. Such new trends are likely to interfere with the economic and social life of the State. If, then, one assumes that the State is to be maintained at all costs, philosophy must be realined in support of the State, in such a way that opposition, instead of requiring troublesome refutation, can be forcibly "liquidated."

Scientific method is, thus, far from being the monopoly of the Communist International. The dialectical method can be useful to every person and to every social group willing and able to contribute to the control of man over his natural and social environment.

The Dislike of Politics

Owing to the shortcomings of present-day politics, they appear as something very arbitrary and unscientific to the scientist. When it was suggested to Huxley by some of his friends that he should stand for Parliament, he replied that "all his life he had been consumed by a passion for the discovery of truth, and not for its obscuration; hence he had never had any ambition to enter on a political career." Political

attitudes appear to the scientist as a matter of taste, and mostly bad taste. He shuns any connection of his scientific convictions with political fashions. It would be as blasphemous to him as to connect them with fashions in eating or in clothes. The essentially non-political character of scientific research is for him a fundamental dogma, and he is more convinced of its truth since the intrusion of politics into science has produced such unfortunate results in Russia, Italy and Germany.

I am fully aware that a few arguments cannot demolish this barrier between politics and science. Nevertheless, I will give two arguments which may at least weaken the existing prejudice against a scientific method which seems so much bound up with politics.

I have just shown that scientific method, as expounded in this book, is not bound up with any particular political sect like the Communist Party. It is concerned with politics only in that it is inspired by a desire for a rational control of society.

Formerly, centuries ago, the problems of industrial production were deemed unworthy of the attention of a serious scientist. In Oxford some of this spirit still survives. Scientists in general have abandoned this contemptuous attitude, to the benefit both of industrial progress and of their own science. Only when the scientific mind has penetrated politics shall we reap the full fruits of the progress of recent centuries.

Scientific work is a branch of the work of society. The high-grade specialisation of work in capitalist society has also affected science. Scientists have split the world into small departments. Every person works

in his own department without knowing or caring much what is done in the departments of others. No plan co-ordinates the efforts of the producers of commodities in present-day society. It will be the task of a rational society to produce this plan. Only in the degree in which we attain a planned society will it be possible to plan science. And as society will benefit from a plan, so will science. In this way also the progress of science itself is bound up with the progress of society and thus the scientist cannot remain indifferent to what happens in the political field. Julian Huxley, in his beautiful book on *Scientific Research and Social Needs*, shows that scientists are becoming increasingly aware of this fact.

CHAPTER V

MIND AND ECONOMICS IN SOCIETY

DURING the thirty years from 1900 to 1930, psychology, the study of the mind, rapidly developed into a fully grown science. The reason why this development should have taken place just at that time is worth considering. For thousands of years human life had been regulated by custom and tradition, but with the twentieth century a new type of civilisation, based upon large-scale industry, had rapidly come into being. Our minds, therefore, were thrown into entirely new conditions to which they were unable to adjust themselves either adequately or sufficiently quickly. Superstition and religion, the traditional means of collective adaptation which had evolved and prospered in agricultural communities, gradually lost their hold upon the minds of the people. Mental disorders of all kinds spread. Mental balance had been disturbed. New forms of adaptation had to be found, and psychologists set out to find them by studying the mechanism of the mind.

Social science obviously has some connection with psychology: in society our minds interact. The recent popularity of psychology may easily lead to exaggerated claims; psychologists may think that the study of the mind will prove the key to that of society—that if we know our motives, we may know the cause of historical change.

The Danger of War

Practically everyone to-day is agitated by the danger of war, and the popular Press has already begun to exploit the feeling. We are naturally interested to know how wars come about, and the psychological explanation of war would point, among other factors, to the great amount of aggressiveness, of "sadism," that has developed in us all while growing up. From early youth we continually find that many of our aspirations and desires are frustrated. We are born as organisms; education must transform us into citizens. As good citizens we must renounce many of our desires in order to become fit to live in society. The process of living is, therefore, a steady disappointment.

Rage is the reaction of any baby hampered in its movements. You can observe this fact if you hold the arms of a baby when it wants to move them. Aggressiveness, similarly, is the reaction of any human being to the painful process of education through which he goes. We develop aggressive inclinations and a "destructive" instinct because we are perpetually annoyed by the many obstacles which reality puts in the way of the fulfilment of our wishes and desires. Most of this aggressiveness must be repressed; if it were let loose, society would be blown to pieces. But in our minds, as in the physical world, nothing is lost; the repressed aggressiveness does not vanish into air, its energy is stored up in what Freud calls our "unconscious." In time of war it is released; it appears as hatred for the enemy, hatred for the Hun who is a menace to democracy and civilisation, whose reported

atrocities in Belgium and whose submarine activities must be punished.

Obviously war would be impossible if the human mind had not stored such vast quantities of aggressive inclinations. It may even be, as Bertrand Russell[1] suggested, that "the modern increase in warlike instinct is attributable to the dissatisfaction (mostly unconscious) caused by the regularity, monotony and tameness of modern life."

But this line of approach will never allow us to see all the relevant facts. If submitted to the test of practice, it leads nowhere. What can we do now against war on the basis of this psychological analysis? Fold our hands, most likely, and resign ourselves to the immutable laws of human nature which bring wars about. If we are of a more optimistic nature, we shall seek to educate people, to purify their souls, to rid them of their aggressiveness, to make them more gentle. Efforts of this kind, however, after 2,000 years, have not been noticeably successful.

It is quite obvious that the aggressive instinct is not in itself sufficient to cause war. In football matches and in all organised sports it would find plenty of outlet. Why, then, under certain circumstances, is the aggressive instinct driven into the channel of war? Psychologically it is difficult to understand why it should be satisfied in such a way that other, equally powerful, instincts—such as the instinct for safety, the food instinct, the instinct of family affection, and so on —are seriously damaged.

Our minds and our motives do not operate in the

[1] *Sceptical Essays*, p. 86.

open air, but within a rigid framework of *economic necessities.*[1] It is only by a combination of the psychological and the economic approach that a full and concrete understanding of this social phenomenon can be reached.

The Psychologist's Account of the Mass

Dr. Johnson, who so frequently tried to out-Tory the Tories, gave vent to his contempt for the masses in the well-known remark: "I will undertake to get petitions either against quarter-guineas, or half-guineas, with the help of a little hot wine." Many people assume that masses are easily swayed, are an easy prey to clever demagogues. An individual is supposed to lose his critical faculties when he becomes one of the mass. Much is said about "suggestion" and the instincts to lead and follow which bring about this transformation. The mind of the individual, it is said, deteriorates in the crowd. His intellectual faculties are blinded and his emotional impulses are barbarised, coarsened and lose their inhibitions. Football matches as well as political meetings appear to prove this thesis. Lack of reason and intelligence are given as characteristics of the mass. Gifts and qualities which the cultivated individual has acquired are lost again and only those naked and crude impulses remain which primitive men possessed. The individuals are equalised in such a way that they are all pressed down

[1] Too much space would be occupied in explaining how economic necessities canalise aggressive desires into the channel of war. Together with Ellen Wilkinson I have outlined this explanation in *Why War?* A short time before that book's appearance, Edward Glover had published its complement: *War, Sadism and Pacificism.*

to the lowest level of the lowest member of the crowd. Crowds are "incapable both of reflection and reasoning." The individuals lose their sense of responsibility and therefore give vent to their basest impulses.

This idea, taken up by the scientists like Le Bon, Trotter, Conway and others, harmonises too well with many current prejudices not to be met with enthusiasm and applause by those who are more interested in the confirmation of their own superiority over the crowd than with the objective study of the crowd itself.

Theories of this kind are very common in works on social psychology. They are due largely to a political bias on the part of the founders of this branch of psychology, who derived their ideas from the study of masses with whom they disagreed, whose motives and actions they disliked. They were opponents of the spread of universal suffrage. To them, as ardent opponents of socialism, the only explanation for the spread of socialist ideas among the masses was the incurable stupidity of these masses. Of historical events, the French Revolution contributed most to forming their judgment. They saw the French Revolution as did Taine when he said: "At that time the people were a beast of insatiable bloodthirstiness and desire for robbing. Nobody and nothing could curb it, and its wild instincts after each excess became more terrible and atrocious." Theoreticians apparently did not reflect that these were the same people who fought heroically against all Europe and reorganised their country on lines which later were adopted by most civilised nations. In recent times, those persons who describe the Russian workers and

peasants to us a degenerated mob, run wild, must have been very much astonished at the achievements of the Five-Year Plans.

Socialists are also inclined to despise the masses when they see them desert to the enemy; they suddenly assume that demagogues can swing the masses round and so deprive them of their critical faculties that they will enthusiastically support their own enemies. To attempt, in this way, to explain the rise of fascism by demagogy, is to explain nothing at all—as for instance, when the Communists explain recent events by blaming the demagogy of the fascists and the "betrayal" of the social-democratic leaders, in both cases assuming an immense foolishness on the part of the masses, who are apparently deaf to the gospel of Moscow.

An impartial study, however, will soon reveal that some groups improve the individual mind, and that others cause its deterioration. One sort of crowd may raise and another may lower the individual's mental level. Sweeping statements about the crowd in general are harmful; only careful distinctions between different kinds of crowds can help us, though we cannot expand here on these distinctions. Under certain circumstances, of course, fear can be increased by a crowd, as in a panic; in an army, so long as it remains intact, the individual soldier's reactions of fear are diminished. Those same persons who believe that the individual mind deteriorates at a socialist meeting or demonstration, will nevertheless believe that other crowds, like those of August 4th, 1914, bring out in him all that is great and virtuous.

But what happens to the *intellectual* faculties of an individual when he becomes one of a crowd? To those who never attend one, a football match, for instance, would appear to have a detrimental effect. A scientific congress may improve the minds of some, but it can also transform itself into an angry mob, determined to howl down an innovator. This mob attitude is usually detrimental to the progress of science, although not always to the immediate material interests of the crowd concerned—of the members of the medical profession, for instance. Juries do very good work in England and lose their sound common sense more rarely than legal individuals; in France and Italy they are, perhaps, not so successful. Committees are excellent for dealing with permanent interests and routine work; in emergencies they are apt to lose their heads.

Crowds are supposed easily to obey the influence of suggestion. Liberal mentality regards the individual as the end and aim of society, as intellectually superior to the mass. McDougall defines suggestion as "a process of communication, resulting in the acceptance with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance."[1] In other words, those of our convictions are due to suggestion which we accept without "logically adequate grounds." Measured by this test 99.99 per cent. of the convictions of any individual, however enlightened, would be due to suggestion.

Masses have the reputation of being narrow-minded. Ortega Y. Gasset, who has written a well-known book on the subject, expresses this conviction in the sen-

[1] *Social Psychology*, p. 97.

tence: "It is their inborn fault to take nothing into consideration which is beyond their horizon, be it facts, be it persons." Phrased in less academic terms, this means that the masses can't see what they can't see. But can even Mr. Ortega Y. Gasset himself see what he can't see, "be it facts, be it persons"?

The intellectuals tend to be unjust to the masses because they attribute to the individual a perfection which the individual has never possessed.

Mental Processes and Economic Necessities

When discussing some aspects of war, we saw that psychological processes operate within the framework of material economic interests and necessities. This holds true also for suggestion. Crowds may be suggestible, but what should drive their suggestibility into the direction of war? What induces them at a particular moment to accept just this suggestion? At the present time many people have a very exaggerated opinion of the influence of the Press. Yet until now the campaigns of the *Daily Mail* have usually effected the contrary of what they intended. In spite of the power of Rothermere's millions the sale of the *Daily Mail* cannot be driven beyond a certain limit, simply because the *Daily Mail* mentality is limited to a section of the population. The newspaper does more to keep the spirit alive than to create it.

Suppose we enquire why the masses which were behind the French Revolution moved in just that particular direction. An investigation of the material demands of the peasants will help us far more to a

solution of that question than superficial generalisations about mass-suggestibility and the herd-instinct. Only reflection on the economic factors can help us to understand why large masses of industrial workers first turned liberal, then socialist, and finally fascist.

Those whose natural environment is the drawing-room or æsthetical salons regard crowds and masses as vulgar or brutal. Any association of large masses for a purpose arouses, in fact, a greater excitement in the individual than the suburban parlour can stand. To assemble people means to excite them. But do excited people always lose their heads; can they not also be excited to greatness? In moments of great collective exaltation and enthusiasm, which mark the summits of history, the average individual is raised far beyond his normal stature. He acquires new dignity. He reaches a clear-sighted vision of the necessities of his society which he may not be able to express in words, but to which he may give expression in songs, symbols and actions, which transform the face of history. Most of what mankind has achieved, and most of what it has transmitted to us, it owes largely to those moments of collective exaltation and enthusiasm.

CHAPTER VI

DO GREAT MEN OR MASSES MAKE HISTORY?

The Advantages of Great Men

GREAT personalities are so much more dramatic than masses of common people, more interesting and human than economic necessities and statistics. The belief, therefore, that great men make history is very easy to understand.

Far too many persons take their knowledge of history from biographies. History is, as Carlyle said, at bottom the biography of great men. The attraction of a well-written biography, the cause of its human interest, is that it makes the reader feel as though he himself were acting on the stage of history. Such a life-story enables him to identify himself with human nature at its best. Biography vies in popularity with fiction and the cinema, because it shares with them the faculty of raising the reader above the mediocrity and commonplace monotony of his own everyday life. For a period he may feel like Napoleon or Cæsar or Rockefeller. A good biography gives him the illusion that he is doing or that he might also have done what such heroes did. And so, in order that the hero may not appear at too great a distance from the reader, a biographer will tend to emphasise his subject's more human side and such of his personal habits as are very similar to our own. Dr. Johnson said "If nothing but

the bright side of characters should be shown, we should sit down in despondency and think it utterly impossible to imitate them in anything." Therefore an atmosphere of ease prevails; obstacles are overcome by the push of the vigorous personality. Making history is like driving in fog: the strongest headlamps are little use. And when we follow the deliberation of a decision by a great man, we share his wavering uncertainty and anxiety just enough to get from it some dramatic thrill. But because we, unlike the man himself, know before-hand how the matter ended, we do not share fully his hard work and despair; we share only in his bright days, not in the dark ones. Last, but not least, biographers make us feel that we move in distinguished company, which is what most of us cannot say of our everyday life.

The great personality can evoke feelings similar to those which we show to our parents. The instinctive search for guidance and for some object for our confidence is able to find its goal in this representative of the parent.

Further, emulation of the personality and success of great men—generals or scientists, statesmen or inventors, poets or oil magnates—is one of society's most powerful means of stimulating ambition. The almost divine ray of glory which is made to emanate from them attracts the less sluggish elements of society as irresistibly as a candle flame attracts a moth. So universal is this cult, so multifarious the means by which it is maintained, that even those who clearly see through the vanity of it all are unable to resist its spell.

Historical memory thus acts in a curious manner.

Napoleon remains, but the hundreds of thousands, of whom he proudly said that they died for him, are forgotten.

The Disadvantage of the Masses

On the other hand, the mass suffers from serious handicaps. The first of these is our inextricable desire to feel superior. Even the seediest schoolmaster beams with joy when he can recite: *Odi profanum vulgus et arceo* (I hate the vulgar herd and hold it far). Even the most insignificant find satisfaction in speaking of "the stupid mass." What does the Duke of Broglio do when he does nothing? He disapproves.

At the same time the mass is often felt as a restriction, an obstacle to one's movement by its very existence. To some degree we have all felt this when walking along a crowded pavement or during the rush hours on the Underground, trying to make our way against a stream of people coming from the opposite direction. When driving in a crowded thoroughfare we may wish to be the Kalif Harun al Rashid, who forbade all others to go on the street when he did. We may sometimes have the feeling that others are rather superfluous, that their existence has no special sense. A German philosopher, Nietzsche, actually gave to this experience the rank of a profound philosophical principle.

Some sensitive natures are made hysterical when forced into contact with excited crowds to which they do not entirely belong. They dread the masses when they meet them; they are horrified by the suggestive

influence of crowds closely packed together. Maupassant said that he dreaded going to a theatre or a public festival: "at once I feel there an odd and intolerable uneasiness, a terrible enervation, as though with all my power I fought against an irresistible and mysterious influence. In fact I fight against the soul of the crowd which attempts to penetrate into me."

The Conservative Theory

There exist two equally unscientific theories regarding relations between leaders and masses. The one theory, which we may label as the conservative theory, regards the leaders as everything and thinks that the masses count for nothing. This is the "great man" theory of history. It takes all volition from the masses; it vests all activity in the arbitrary decision of the great man. The "shapeless" masses are his passive object. The masses are inconstant and fickle, they have no will of their own and allow the will of others to be urged upon them; their actions are decided not by themselves but always from outside; they count for nothing in history since they never know what they want. All creative and truly historical decisions come from powerful individuals. The masses have neither intelligence nor judgment. They are shortsighted, credulous, stupid and ignorant. Nothing is so uncertain or so worthless as their judgment.

For many centuries this "truth" has been repeated with gusto.

The Anarchist Theory

The other theory, less widespread, is the anarchist theory, which assumes that the masses are everything and that the leaders count for nothing.

Anarchists, as a rule, are more credited with throwing bombs than with evolving theories of any importance. The most varied movements are often lumped together under the name "anarchism." There is especially the extreme type of individualism, liberalism run mad; "mind everyone his own business" being the principal maxim of the movement. But anarchism as a political term denotes a movement which, developing after 1880, has deeply influenced the working-class movement in Italy, France, Spain and the U.S.A., and has played a prominent part in the post-war revolutionary movements in Germany, Russia and Spain. Many martyrs have died for this faith, from the Chicago martyrs of 1885 to Sacco and Vanzetti in 1927. Among the theoreticians of this form of collectivist anarchism are such famous thinkers as Bakunin, Tolstoy and Kropotkin.

The anarchists regard the masses, "the nameless crowd," as the source of all creative and constructive impulses and ideas in history. In the *History of the French Revolution*, Kropotkin has demonstrated how fruitful this approach can be. His work is worth careful study, as being one of the classics of historical writing.

The Materialist Conception of History

Some members of the Socialist movement are more filled with hatred and rage against the existing order

of society than with love for a new socialist state or a co-operative commonwealth. In their hearts they long more for the destruction of the old society than for the construction of the new. Such are those of whom the French socialist, Blanqui, has remarked that they are invaluable before a revolution but should be shot the day after its victory. In the violence of their negative reactions against current opinions, they swing over to the other extreme; interested merely in the denial of what exists, their philosophy of history denies to the great personalities any influence upon the course of history. These people have done much to discredit the socialist theory.

In actual fact, the materialist conception of history favours the masses. Not ideas, nor battles, nor the decisions of statesmen, ultimately decide the course of historical development, but the way in which people earn their living, the economic activities of the masses, the method of production and exchange prevailing at any given period, and the consequent material interests of the classes. Professional historians, therefore, instinctively regard it as a somewhat lowering theory.

The idealist account of history assumes that history is moved by what is the privilege of the few, by disinterested enthusiasm for philosophical and religious ideas, on the one hand, and by political and military capacity, knowledge and experience, on the other. The materialist account assumes that it is ultimately moved by what is accessible to all, by what is in fact the daily work of the many, the masses. This confidence in the masses is reflected, in the political sphere, in the famous saying of Marx that "the emancipation

of the working class can be only the work of the working class itself."

At the same time, this conception has room in it for the influence of great personalities. As Plekhanov remarked, "If history is made by human beings, it must obviously be made by 'great men' among the rest." Marx in his historical writings freely acknowledges the influence of "great men"; his writings are full of brilliant descriptions of leading personalities of his time.

The Practical Problem Involved

The respective historical role of leaders and masses has been discussed with so much vigour because it is connected with practical questions. It is quite obvious that the more one attributes to the masses, the more confidence one has in their creative faculties, the less authoritarian will be one's conception of the State. On the other hand, the greater the admiration for strong government, the more marked the contempt for the masses. The predilection for autocratic government in Germany is responsible for the fact that historians in Germany celebrate and practice the "great man" theory in its most offensive form. It was Carlyle who imported the theory into England from Germany; it influenced his vicious vituperation of the Reform Bill of 1867, which gave to the masses some influence in British politics.[1] Mediæval despotism is reflected in the neglect of the masses in the vision of mediæval historians. The mediæval chronicler, Villehardouin (about A.D. 1200), in describing the fourth crusade, can see only the noblemen, his own

[1] In *Shooting Niagara and After*, *Essays*, Vol. V.

friends. A careful counting of the references to the masses in his chronicle reveals only three: on the first occasion they were killed in large numbers, on the second many escaped but were killed later, and on the third, having small knowledge of arms, they became frightened and felt uneasy. That is all; the masses otherwise are absent from the picture.

In England, the habit of democratic government has produced a more moderate attitude. Theory and practice go hand in hand. In particular, the attitude of the liberals to the masses has always been rather ambiguous, uncertain and half-hearted. On the one hand they demanded greater liberty and voiced popular reforms—they felt with Abraham Lincoln that the Lord prefers common-looking people and that was why he made so many of them—whilst on the other hand, both in England and in Germany, the extension of suffrage to the working classes has been forced upon them by Conservative statesmen, by Disraeli and Bismarck. When the control of the liberal parties fell into the hands of the factory owners, they necessarily came into conflict with the large masses of the industrial workers, who first turned socialist, and then, in some countries, fascist. J. R. Green, in his well-known *Short History of the English People*, went as far in recognising the masses as a liberal possibly could go. He made the "people" the hero of English history and it has been said of his work: "The pyramid which historians had tried to balance on its apex, now rests on its base." The limits of his standpoint are a consequence of the alternate hope and fear which the masses inspire in liberal politicians.

Finally, the anarchists seek to do away with all central government and dissolve it into free, federal and voluntary associations or communes, which govern themselves not through authority but through free agreement. People are supposed to be reasonable enough not to need the patronage of the State. The development of the spirit of local and personal initiative is what should be aimed at.

The Possible Answers

Obviously we have here an opportunity to apply the law of the unity of opposites. Two extreme and unscientific theories oppose one another. The one states that the leaders are everything and that the masses count for nothing; the other states that the masses are everything and the leaders nothing.

Most of the professional historians oscillate between these two assumptions. Usually an historian's field of vision comprises mainly the opinions, emotions, motives and decisions of some great men, the negotiations and intrigues of some diplomats, ambassadors, courtiers, and other members of the State administration, and finally the theoretical and artistic creations of some thinkers and poets. The economic basis of all their doings is just mentioned when it can hardly be avoided. For the rest, the facts of economic history are bottled up in separate economic histories and not brought into living contact with the political and cultural events.

These historians more or less prefer to see only a section of the actual events, which appears to them to

develop more or less independently. Historical development becomes completely unintelligible, and we stumble from miracle to miracle. We shall now see that the events in this political or cultural section of history become intelligible only by taking account of the impulses coming from the material interests of the social groups and the way in which they produce their daily bread.

The dialectical theory studies methodically the relations between masses and leaders in the light of the law of the unity of opposites.

We must abandon the idea that masses and leaders are separate entities, each going its own way, each emerging from a different source. The unity between these two opposite factors of historical change has many aspects. It cannot be comprehended in one sentence. The purpose of the two following chapters will be to view it from as many angles as possible. Each side of the unity can be illustrated here only by one or two examples; the reader himself may easily supply others. The possible illustrations are as innumerable as are the facts of human history.

CHAPTER VII

THE GREAT MEN IN HISTORY

An Insoluble Question

THE history of any science abounds in insoluble questions. Long ago it was proved that it was impossible to square the circle or to build a *perpetuum mobile*. This did not prevent 261 people from squaring the circle during the nineteenth century, to count only the published solutions. In social science an insoluble question of this kind frequently obscures the real issue; the wrong question must be removed before anything else can be done.

We frequently meet with the question: What would have happened had Napoleon died at the battle of Marengo? Or: What would have happened had Cromwell died from scarlet fever as a boy? Or: What would have happened had Lenin been killed in Siberia by a bear? Recently Mussolini, while showing his skill as a building worker, lost both his trousers and his equilibrium and was in danger of breaking his neck. This gives ample material for speculation: What would have happened had the faithful fascist, who saved the Duce's life by quickly grasping his braces, dallied on his way to the function and so arrived too late? But how is anybody to tell?

It is quite unscientific to ask what difference it would have made to history had Napoleon, Cromwell or

Lenin never lived or had they died early. The question must be rejected as unscientific, as a sheer waste of time, because we shall never be able to answer it. It compares with the question: What did God do at 4 p.m., 43 days before he created the world?

In chemistry and physics we can generally isolate a factor by experimental means. To ascertain the influence of the resistance of the air on the speed of a falling body, we first let it drop in air, measuring the speed of its fall, then, extracting the air, drop the same body in a vacuum, again measuring the speed. If all other circumstances remain equal, we can attribute the observed difference in speed to the action of the factor "air."[1] Unfortunately, historical events do not provide us with opportunities of this kind. We cannot repeat the events of the years 1800 to 1815, leaving out Napoleon, and see what happens without him.

In the absence of any experimental or empirical test we must recur to vague speculations and assurances. Most people will think that the absence of Napoleon would have made a big difference. Some "Marxists" on the other hand, assure us that it would not have mattered if Napoleon had never lived, that another would have done his work. These Marxists "prove" their thesis by asserting that, whenever a great man has been necessary, he has always been found. Surely, from atheists this is a faith which might move mountains. Sidney Hook[2] has shown quite clearly that this assertion is without foundation. We cannot know that a great man is needed except by watching whether he

[1] Professor Levy gives many examples in his *The Universe of Science*.

[2] In *Towards the Understanding of Karl Marx*, pp. 142-9.

appears. If he does appear, then he was necessary; if he does not appear, then he was not necessary. This way of reasoning is more illuminating as an example of a "vicious circle" than as a forecast of historical events.

The Correct Questions

The question concerning the function of the great man in history, therefore, needs rephrasing: What shapes the activities of the great man? What determines their directions? What is his function in the march of historical events? What shapes the activity of the masses? What gives them direction?

When we speak of a "great man" in this chapter, we simply mean a leading person. We cannot burden the discussion with profound thoughts as to whether this or that leading person is truly great or not. That is, after all, largely a matter of personal preference.

Great Men and Social Needs

Thomas Carlyle maintained that sincerity was the greatest virtue of the great man. The great man does not stand alone. He stands for something that is infinitely greater than himself, for some ideal and aim which fills his life and gives it sense. Bismarck devoted his life to the unification of Germany; Napoleon to saving for France the main results of the Revolution, the liberty of the peasants and of commerce; Gladstone translated the economic rise of the middle class into political power. There is not one great man in history who did not do more than merely be great.

The goal for which he fights is not created by the great man himself. For many years it has been the desire of the many. It was felt long before the man himself appeared on the scene. When he was young he was one of the many who were filled with the aspiration to which he was later to give shape. He was thrown up by the many, and he remains standing upon them. It is by fulfilling a social need that a man acquires greatness. He must be soaked in this social need and his power and success depend on his capacity to fulfil it.

Popular superstition credits a number of historical persons with the ability to rule without satisfying a great part of the population. In recent times the enemies of Hitler, Mussolini and Stalin have tried to depict them as personal dictators, based upon a small gang of followers and trampling down the bulk of the population. In relation to Russia this is obviously absurd; as for fascist countries, Ellen Wilkinson and I have shown in detail in our book *Why Fascism?* the mass basis of the dictatorship. I must refer to this book, since there is little point in repeating here what we have said there.

This superstition derives largely from schoolbook accounts of the activities of the Roman Emperors. They, the rulers of the entire Mediterranean area, are depicted as model tyrants, as self-indulgent creatures sucking the blood of a whole Empire, which they regarded as their private prey, as a source from which to satisfy their perverse and megalomaniac desires. They appear as tyrants possessed of great power whilst satisfying nobody.

In actual fact these accounts owe their existence to the very biased reports of Tacitus and Suetonius, who wrote from the standpoint of the former ruling class, of the senatorial Roman nobility. But—and this is the important point—the Roman Emperors were able to defy the wrath of the nobility not because they had hired a prætorian guard, but because they looked after the needs of the greater part of the free population. The splendid administration which they gave to the Roman Empire is obscured by unimportant, although highly immoral and therefore fascinating, incidents happening at their courts. A remark of an ancient historian, Dion Cassius (59–28) helps us to see events in a truer light. He says: "The people were not angry about the misdeeds of Caligula. On the contrary they were pleased about them. They were also glad to see him rolling in the gold which he had heaped up through the degradation of the rich." This is some concession from an enemy of the Emperors, who, against his will and in a distorted manner, allows us to have a glimpse of the mass basis of the Roman Emperors.

In the most profound book which has ever been written on political science, Aristotle defines tyranny as the rule of one man with a view to his own private interest and not at all in the interest of the persons ruled. To be sure such tyrannies existed in the Greek world, but they were confined to very small areas and lasted only a very short time. Aristotle expressly states that those "tyrannies" which lasted a long time, like those in Corcyra and Corinth, existed so long only because "in most things they kept the lead of

the people by looking after their interests." What is true of the small City States of Greece is a hundredfold truer of the big nations of present-day civilisation.

Objective Necessities

The leading man is not a free agent. His liberty is restricted by objective necessities and possibilities. It is just by fulfilling these that he acquires power and greatness.

English foreign policy in Tudor times abandoned the attempt to make territorial conquests on the continent of Europe, preferring to maintain the balance of power, that is to say, the policy of making the Continental powers so to counterpoise one another that none of them should be able to threaten England's independence and her seaborne commerce. This change of foreign policy was not due to a lucky brainwave on the part of some great man, say of Cardinal Wolsey. In the sixteenth century statesmen had to observe the changes which were going on and to act accordingly, to obey their necessity.

The traditional policy of "balance of power" has proved stronger than any individual and any succeeding government. Statesmen from Pitt to Lloyd George acquired greatness only by submitting to it. Some renewals of the policy of territorial conquest on the Continent proved short-lived and abortive. This policy (of "balance of power") involved, as everybody knows, the effort to oppose any power which might dominate the Continent. Philip II, Louis XIV, Napoleon I, and William II are the main trophies.

Those statesmen who opposed the policy were either debarred from power, or, when they obtained power had to adopt the policy. Although beforehand they might have been most ardent advocates of peace, they had to surrender their individual desires, as did Fox in 1806 and Grey in 1914. The individual has the choice to obey or be punished; when he assumes responsibility he becomes her prisoner simultaneously.

It would be most mechanical and one-sided a viewpoint not to allow for the capacity of individuals to divert the course of history. They can do so, but not for long. Alexander could unite Asia and Greece; they burst asunder as soon as he died. The constitutions which Sulla and Cromwell gave to their countries did not long outlive their makers. The Napoleons established some French influence in Egypt against the high odds of the British Navy; but their influence lasted only a short while.

It is quite unscientific to attribute any social event to the wickedness or the "betrayal" of, say, Mr. J. H. Thomas or Mr. Walter Citrine, as many left-wing supporters have done recently. These two, for instance, stand on the shoulders of millions of workers and carry through what millions of workers want. It is because millions of workers saw the use of the Empire that they voted for Mr. Thomas and the Tory Party, and whilst Mr. Citrine may appear backward to fervent socialists, he is at least several inches ahead of the vast majority of the rank-and-file trade unionists whom he leads, whose sole wish is for higher wages and a better standard of living, whether under capitalism or socialism they do not greatly care. Those who

continually blame leaders for not bringing socialism into being should pause to consider the crude fact that in 1931 one half of the working class voted Conservative. The other half voted Labour. Among these last there will be between 50,000 and 60,000 socialists at the most; the rest would not in the least mind achieving socialism provided they could have it without trouble. The Tories know what they are doing in raising the scare of financial crisis.

This distribution of forces amongst the masses is the main factor. The leaders only reflect it. We have not the least chance of achieving socialism without convinced socialists who are willing to stake even their post-office savings for the sake of this objective. Socialist masses alone can produce socialist leaders.

The Character of the Great Man

But the character and qualifications of the great man, do they count for nothing? We have spoken of the objective external circumstances which force him to act in a particular way. This leads us to the main conclusion about his qualification. He must faithfully mirror the objective forces about him. Hitler has astonished us all by his inept remarks; nevertheless, he is an objective mirror of events. Carlyle summarises this point by saying that the great man "needs wisdom to discern what the time wants and valour to lead it on the right road." That is to say, he must have a genius for knowing what ought to be done in a critical moment, whether in battles, assemblies, business, and so on. It would be tiresome to explain that he must

be able to employ the right men in the most efficient way, and what such a commonplace signifies.

Two facts must be distinguished: that this particular man is a leader, and what this leader does. The latter is determined by the objective circumstances; the former is decided by his capacity to adapt himself to these circumstances, and all his virtues conspire to make him more efficient in that adaptation.

Of course, the great man has also personal idiosyncrasies in which nothing dwells of any objective necessity. His person is like an alloy. His peculiarities are as copper which is added to the gold. Readers of biographies are easily induced to mistake this copper for the gold. These peculiarities are either of no social or historical importance whatever or else they hamper the efficiency of the great man as an instrument of necessity. It may be of considerable human interest to know that a certain hero liked to drink port wine, and to use uncouth language, that he preferred blondes, easily caught cold and loved Corot more than Cézanne. These anecdotal details in no way illuminate his historical mission. Many of these traits derive their interest only from the celebrity of the person who possesses them.

Great men have one of two functions. They may become the symbol of unity for a group of people, its visible centre and point of stability; the chief importance of the Roman Emperors was just that they existed, similarly the King of England is referred to simply as the Crown, and Hitler has achieved the same significance in Germany to-day. On the other hand, the alternative function of the great man is to lend a

voice to the inarticulate masses, or to translate their desires into action. They have to bring the vague wishes of the masses into contact with ever-changing reality, to adapt the one to the other. That is their greatness and that is their function. The Russian peasants wanted the land, the Russian workers sought to abolish Tsarism; no Lenin was needed to create these desires. It would be quite absurd to think that Lenin *made* the Russian Revolution. But it did need a Lenin to know that July 1917 was a bad time and that 7th November, 1917, was the best day and the right moment to strike. Lenin's whole life consisted in seeing the ever-changing questions of political life with the eyes of the peasant and the worker. The workers and peasants of Russia had, as it were, delegated him to fulfil this adaptation. Every statesman is great in so far as it can be said of him that he looks at the events of his time with the eyes of his group and acts accordingly.

The Mutual Attraction

In Chapter III we said that the *unity* of opposites has many forms. One of the most frequent is the interaction and interdependence of the opposites.

Every student of the French Revolution knows that the great men or leaders were not equally distributed on both sides of the struggle. Whereas the revolutionaries had a number of first-class leaders, like Mirabeau, Marat, Danton and Robespierre, their opponents were led by persons of extreme mediocrity. The same is true of the Russian Revolution. The

calibre of leadership of the Bolshevist Party was considerably superior to that of its opponents. We need only compare Lenin and Trotsky with Kerensky and Koltchak and Denikin; for Kerensky was a vain and verbose fool and the other two were generals without a spark of genius.

The most popular interpretation of such facts is simply that these two revolutions were victorious because their leadership was so good. Why this should have been we are usually told is due only to chance. Now chance actually is an important factor in history. But chance must be understood. Mathematics has reduced chance to its rules, so chance in history will not be beyond the reach of science. It is curious that chance should favour certain people to the exclusion of others. "Chance helps the strong," as the Roman proverb says. The writer himself remembers quite well how, in the fight in Germany with the Nazis from 1929 to 1933, it was the Nazis who always had the lucky accidents, whilst the Socialists had all the unlucky ones. If leaders are due entirely to chance, mankind must surrender all hope of understanding and shaping history; it must sit still and await the great man.

But the scientific explanation of the apparent accident of leadership is that great leaders and groups with strong logical cases are mutually attracted to one another. Capable men are usually ambitious and are attracted by groups and movements which have some chance of victory. They are repelled by the muddle, intellectual and organisatory, that accompanies a hopeless cause. To be sure Kerensky was a fool, but the movement also which placed him at its head had

nothing to offer anyone. In its attempt to continue the war and to keep the land for the landlords, the Kerensky government ran counter to the wishes of the majority of the population. It tried to maintain power by purely demagogic means, which were rapidly exhausted. Because the cause for which Kerensky stood was an illogical and an unreal one, he was defeated. He was an insignificant man for leadership, but he was the only man of note his cause could attract. As for the French Revolution, the cause of French feudalism had for decades been defeated in practice, as shown by the bankruptcy of the State and its military incompetence, until it could find no able person to support it further.

In his latest book Mr. Bertrand Russell remarks: "If the Prussians had happened to have a good general at the battle of Valmy, they might have wiped out the French Revolution."[1] Was it entirely a matter of chance that the Prussians had no good general at Valmy in 1792? Was it a matter of chance that the feudal European troops, who were out to crush the French Revolution, were led by the Duke of Brunswick, a completely incompetent man of seventy years? If there was ever a case in which military organisation reflected the economic and social state of society, it was this. Russell would appear to think that it is wholly a matter of chance whether you have a good general or a bad one. The peasant soldiers of France, who fought in defence of their newly-acquired soil, were better soldiers than the feudal serfs who were driven against them. The young generals just pro-

[1] *Freedom and Organisation*, p. 238.

duced by the people, fresh and unspoiled, were superior to the old though aristocratic fools who, according to seniority, led the feudal troops. So long as France had the advantage of their new social system over decadent feudalism they were victorious and had the better generals. But the Prussians had not Russell's superficial view that good generals are a matter of chance. They reformed the social system on the lines set up by the French Revolution, and thereafter the Prussians knew for what they were fighting, and at once the good generals, Bluecher, Gneisenau, Scharnhorst, Clausewitz, seemed to arise as a matter of course.

At the same time, we must observe an *interaction* and a *mutual dependence* between leaders and masses. Technically, the leader or great man depends on his followers. Napoleon alone would not have won one battle if he had not had soldiers to whom the newly won soil gave courage and energy, and officers who could gain advancement and social position by bravery. The great man is only one. The quality of the work depends on those who translate his orders into concrete reality. In the case of Trotsky the qualifications of the great man personally have remained the same; but because his mass basis is gone he is reduced to impotence.

In the course of the Russian Revolution one experience demonstrated how little the leader can do without the masses. It happened to General Kornilov when he marched on revolutionary Petrograd: "The conspiracy was conducted by those circles who were not accustomed to know how to do anything without the

lower ranks, without labour forces, without cannon-fodder, without orderlies, servants, clerks, chauffeurs, messengers, cooks, laundresses, switch-men, telegraphers, stablemen, cab-drivers. But all these human bolts and links, unnoticeable, innumerable, necessary, were for the Soviet and against Kornilov. The revolution was omni-present. It penetrated everywhere, coiling itself around the conspiracy. It had everywhere its eye, its ear, its hand."[1] Kornilov never arrived at Petrograd.

[1] Trotsky: *History of the Russian Revolution*, II, 233.

CHAPTER VIII

THE MASSES IN HISTORY

LET us now examine more closely the masses, the second of our pair of opposites. What is it that shapes their actions and directs their activities? In reply to those who say that it is the great man who gives shape and direction to their activities, we have just shown, on the contrary, that it is the leader who himself receives the line of his main route from the movement of the masses. But where do the masses, in their turn, get theirs?

The masses may consist of persons who, to those enlightened individuals who have studied at the universities or are interested in the higher arts, look as individuals foolish, stupid or unenlightened. Yet, the astonishing fact seems to be that, in spite of these shortcomings, the masses so often arrive at reasonable results. Not always is that true, of course, but more frequently than is generally assumed.

Hegel has taught that everything that exists is rational. Applied to history this meant that all historical changes and events must be in some sense progressive. For him they were progressive in the sense that they helped the Absolute Idea to fulfil and realise itself. His main sentiment has been well expressed by James Martineau: "All the good agencies which the progress of mankind evolves are formed in

the same unconscious way. They are the aggregate result of countless single wills, each of which, thinking merely of its own end, and perhaps fully gaining it, is at the same time enlisted by Providence in the secret service of the world."

With the spread of technical equipment and comfort in the nineteenth century, progress came to be taken in a more material sense. But for long the idea of progress influenced the understanding of history, and even now it is not entirely extinct, at least in England. I myself must confess that I do not consider the idea of progress to be of any use for the understanding of history. Incidentally I note that the belief in progress conflicts with the law of unity of opposites. In actual fact our experience shows that each advantage is always accompanied by a disadvantage, each gain by a loss. In history we seem always to be treading on the same ground. We mark time rather than proceed. History is rational to a great extent. Historical changes are rational in the sense that they are in the material interest of some social group.

In China, for hundreds of years, bearded philosophers gravely debated the problem as to whether man is good or bad. The solution to this problem was considered to be of vital importance to society and to the State. Neither was the controversy unknown in Europe. Machiavelli's harsh and gloomy doctrines are the outcome of his conviction that "men, being naturally wicked, incline to good only when they are compelled to it." The theory of "original sin" has greatly influenced the policy of education. If a man is, deep in the marrow of his bones, wicked and sinful

from the outset, then it is the task of a stern and rigid education to curb his wicked will and to drive out his natural inclinations which are all so polluted. If a man, however, is good, then his procedure will be wrong. He must be allowed to grow freely and as few obstacles as possible should be put in the way of his inherent perfection.

Scientific thinkers will agree with neither of these views. Remember the law of the unity of opposites: the scientist holds that man is both good and bad, both rational and irrational.

We should see history in too rosy a light if we dwelt exclusively on the element of rationality in the masses. We must allow for the power of what Treitschke has called "the forces of stupidity and sin in history." In the present chapter I spend little space on them, because they are so obvious. Many people seem to delight in contemplating the forces of stupidity and sin in the actions of their fellows, because in this way they believe they can wash their hands of the results.

Before we ask what directs the movement of the masses, perhaps we had better first discover how the individual comes to his convictions and decisions.

Formulated thought usually veils more than it reveals the true springs of our actions and even of our convictions. The deeper modern psychology has probed into the nature of the mind, the more it becomes convinced that reason does not belong to the depths of our nature. Julian Huxley thus summarises the findings of fifty years of psychology: "Reason is not an impelling force, and all too rarely

a guiding hand: in the majority of cases it is just engaged in finding reasons—more or less rational excuses, if you like—for the actions to which we find ourselves impelled."[1] Irrational emotions and desires, long-repressed impulses and anxieties, the suggestions of parents, teachers and friends and enemies, prompt us to our actions and convictions.

A mole will collect earth-worms for food during the winter months. He bites off the head of each worm, so as to paralyse it, to render it inert but not dead. This he does in the autumn. If he did it in the summer the head would grow again and the worm would escape. But a new head will not grow at the lower temperature of autumn and the worms lie imprisoned without walls. The mole certainly has no rational knowledge either of the nervous system of the earth-worms or of the effects of different temperatures on their growth. But he acts correctly, for he increases his adaptation. We are not acquainted with the processes by which the mole comes to his results, but we call it "instinct."

"Instinct" guides almost everything we do. Even if we deliberate, and the scale seems to be fairly even on both sides, it is inclination and instinct which help us to the final decision. Business men, journalists, craftsmen, even scientists, owe their successful adaptation to instinct. When questioned they can rarely explain how they had come to just this successful bargain, to that piece of news, to this skilful operation or to that fertile idea.

Because we live in a society in which it is considered

[1] *Scientific Research and Social Needs*, p. 189.

desirable to appear as a reasonable being, we prefer to cloak our irrational impulses and instincts in the mantle of reason. "Rationalisation" is the term applied to this procedure.

Most people have heard of hypnosis. In this state of mind we yield to most commands of the person by whom we have been hypnotised. But the command of the hypnotist over the will of another person does not cease with the hypnosis. He can exercise what is known as a "post-hypnotic" influence; he can give post-hypnotic commands. He may tell his subject to go next Friday at 11.30 p.m. into a shop and demand seven Players' cigarettes and to insist on getting them. This the subject will do and, when asked why, he will produce many plausible reasons. In everyday life we all behave very much like the man under the influence of a post-hypnotic command. We come to more or less reasonable results by processes in which reason is not very much involved.

What is true of individuals, and does not astonish us there, should not be so incredible if we meet it in *groups* of individuals. The average person is usually shrewd enough to know how public events are likely to affect his own income or social position. In such cases he will probably act like the sensible person he is, wherever his own welfare is concerned. It may be that his stock of verbalised social knowledge will be a mixture of platitudes and half-truths. It is common observation that this knowledge appears not very inspiring if formulated in words. But there is a great difference between his verbal knowledge and his actual knowledge—that is to say, the knowledge or

awareness which immediately and instinctively guides his actions.[1]

I think that here we have the cornerstone of all historical and social research and of all political action. We must assume that the masses know their own material interests to a greater extent than is generally believed. True, they are not governed by abstract reasons and principles, but by passions and emotions. To be sure, they rarely reflect. But the question is whether their passions are usually in conflict with their true interests or whether they are conducive to them. Intellectually they are aware of their interests only in a disguised form. Practically, they act upon them very frequently.

What is the material interest of a social group? The material interest of any group consists in getting the biggest share of the national income and social consideration. The desire for social status is, I think, as important as is the interest in a higher income. For at least five years the Bolsheviks have kept their workers enthusiastic by compensating them for the heavy fall in their standard of living by higher social status. Hitler is now repeating the experiment with notable success, reducing wages and in their stead conferring honour on the workers.

Groups show how they understand their interests when challenged. Consider the General Strike of 1926. The British middle class rose as one man to break it. It was natural that they should do so; accustomed for a long time to rule the country in association with aristocrats and industrialists, they

[1] Read *Babbitt* and you will see the point.

would have lost part of their power and income to the trade unions had the strike proved victorious. But the average middle-class man, who set out to break the strike and was furious with what the workers were doing, did not argue in this manner; he thought in terms of duty to his King and Country. Without being able to formulate his class interest, he nevertheless acted upon it.

If we would understand the anatomy of the human body we must first make ourselves acquainted with the skeleton. If we would understand the anatomy of society, we must first study the bones of the social body, and these are the material interests of the social groups, resulting from the way in which they earn their living and from the position which they occupy in society. Because these bones are hidden deep below skin and muscle they are easily overlooked by superficial students.

The psychologist rarely believes everything an individual says about himself. Frankness in this respect is not a common virtue, and it is doubtful if it is a social virtue at all. People conceal their true nature not so much from a lack of innate veracity, or from an originally sinful disposition to deceive, as from the pressure of social conventions. It is the same with social groups. Groups are generally concerned to veil actions which serve their material welfare with talk about professed altruistic and noble intentions. They are aware of their interests but they can state them only in a disinterested form.

Parsons, for instance, insist that Sunday should be kept sacred. A God's sign between himself and His

people, it should be kept free from the desecration of worldly amusements. The reason is wrong, but the sentiment is right. It is, in fact, difficult for churches in big towns to stand the competition of football matches, cinemas, theatres, and so on. In Germany after 1918 the competition went on unchecked, with the result that in 1930 only one in every 1,000 persons went to church in Berlin. The parsons act correctly in the interest of their social group, although, of course, they believe they are acting from the most altruistic motives. Obviously, empty churches are good neither for their income nor for their social status.

History ceases to be a meaningless and hopeless jumble of events and an empty pageantry only if we start with the assumption that the masses roughly, within certain limits, know their own interests. I consider this statement to be the basis of all social science. But the basis is not the building itself. It would be mistaken to see in the material interests of the masses the sole key to history. The statement needs a number of qualifications, of which, by reason of space, I can single out only the most important.

The Art of Finding Pretexts

The art of politics is to a considerable extent the art of deceiving others about the true motives of our actions. In the most successful political bodies this art has become something like a sixth sense. The Romans, for instance, never attacked anybody for the purpose of stealing their gold and enslaving their inhabitants; they were always being attacked or they had allies

who were being attacked and who had to be defended in the name of the sanctity of treaties. Even in the nineteenth century a learned professor remained so much the dupe of these pretexts that he contended quite seriously that the wars of the Romans were never aggressive but always defensive, so much so that in the end they had conquered the whole of the Mediterranean in sheer self-defence!

When Crassus slaughtered the slaves who followed Spartacus, he did not do so from any mean economic interest—say of keeping them quiet for a long time—but in order to save the outraged honour of the slave-holders, their *pudor*, as the Roman historian Florus (III, 20) calls it! When Hitler to-day wastes the whole resources of a nation of sixty million people on re-armament, he does not do so in order to use his aeroplanes and men for the shabby material interests of conquering markets and sources of raw material; he seeks only to satisfy the honour of the German nation, which can be appeased only by these highly expensive toys.

The English people have inherited the proficiency of the Romans in veiling their interests. Compared with them, the Germans with their "scrap of paper," "blood and iron," "mailed fist," and so on, are crude and ineffective. Our attitude to India affords many obvious illustrations. Abroad, English people are therefore regarded as hypocritical. But many of them are quite honest in their "hypocrisy." With their uncanny political instinct they have seen how important it is to have morality and respectability on one's side. England's cant is one of the roots of England's greatness.

The art of politics consists in hiding one's purposes and motives. The science of politics and society consists in laying them bare.

The Possibilities

In each situation a social group, like any individual, is confronted by several possibilities. Life would be easier if we had not perpetually to choose between two goods or evils and between several lines of action. If of two such possibilities we wish to embrace both, we get nowhere, as the man in the Hungarian proverb who wanted to eat at two weddings at the same time.

In the eleventh and twelfth centuries intolerable misery befell vast masses of the European peasantry. They could only raise their standards of living either by taking the land of their feudal lords or by plundering somewhere else. And so it happened that the feudal lords were suddenly seized with religious fervour and a desire to worship Christ in the town where He had lived. The Holy Sepulchre, incidentally, belonged to the richest country within reach then known. The crusades thus patched up the feudal system for some time.

In the nineteenth century the more active elements of the workers were faced with a grim choice: either to revolt or to go abroad. They chose the latter. Eight millions went from the United Kingdom alone to the United States. Dozens of millions of workers from the European countries went overseas. The revolutionary army on which Marx had counted melted away. They had chosen the line of least resistance.

Recently several countries were confronted with the choice between socialism, communism and fascism. The choice was between raising the standard of living by a socialist reconstruction of society, or by an external war. After the masses had seen clearly that the socialists of both wings got nowhere nearer the aim, they chose fascism.[1]

In most cases the choice is decided by the line of least resistance or trouble, of least uncertainty, risk and daring, it being supposed that the choice remains compatible with the material interests.

I am well aware that the principle of the line of least resistance is used in mechanics to explain the movement of inorganic bodies. Used as a technical term for a dialectical principle, it can therefore describe only approximately what happens.

Temporary and Permanent Interests

Some people who would agree that the masses frequently see their own interests, would add that nevertheless they can take only a shortsighted view of what their interests are. How far do they look ahead? Do they know their interests only from moment to moment? Do they only see the meal to-night, or do they also see the meal three years hence?

I feel that we can make a sweeping statement neither way. The British industrialists who exported machines abroad did not consider what would happen twenty years later. Yet the British statesmen who went to war in 1914 were disturbed by a German navy and

[1] In *Why Fascism*, this is explained in greater detail.

German threat to India which could have become effective only twenty years later.

In any strike the temporary and the permanent interests of the workers come into conflict. Among the blacklegs the temporary interests win; among the strikers the more permanent ones.

Sometimes the masses obviously act on their more permanent interests. Observe the way in which the English working class behaved during the American Civil War (1861–5). The working class in Lancashire suffered severely when the Northern States cut off the supply of raw cotton, 85 per cent of which came from the Southern States. In spite of that the workers did not side with their own ruling classes against the Northern States. Mowat, in his famous *History of Great Britain*, writes: "On the whole the sympathy of England, certainly among the middle and upper classes, was with the South. The chivalrous leaders of the picturesque South, their dashing tactics, appealed to the hearts of Englishmen" (p. 816). This sentence is a good example of the lack of scientific method in historical writing. His appeal to the spirit of romance explains nothing. Why was it in this case so much stronger than the noble feelings which the same gentlemen had so frequently expressed in favour of the liberation of the slaves? Surely, it is plain common sense that some material interest dominated their attitude.

Partly, this material interest was the reverse of that of the workers, who favoured the North. In spite of their sacrifices, the workers wanted the North to win. What was their material interest in this desire? In the

long run, the standard of any worker is endangered by the lower status of other workers anywhere in the world. At the same time, the principle of democratic self-government was at stake. In the famous words of Lincoln, the U.S.A. made the great experiment of government of the people, for the people and by the people. The reactionaries hoped that it would not work, that it would prove unworkable by the disruption of the United States into two halves. The working masses hoped that it would win; its success meant for them a higher standard of life. And, in fact, two years after the Northern States had won the American Civil War, the suffrage was extended in England to the urban working class. The average Lancashire worker, of course, did not reflect in this way. He was honestly indignant about slavery. But his emotions led him to a correct result, to a result which was in keeping with his more permanent interests.

The Range of Interests

Only very big issues can move the masses. Ordinary details of administration leave them cold. They leave a free hand to the ruling caste in all other matters. There are large spheres of social life which do not immediately concern them, but these spheres are not hermetically sealed from them. There is a continual interaction between the different layers of the pyramid.

Take the new India Bill with its hundreds of legal provisions. What the average person seeks is to retain India for the benefit of his own country. That is all

he knows. What he cannot know is whether it will help that purpose if this right is given to the Princes, this to the Governors, this to the Provinces. On matters of fact the masses can be easily deceived, but they cannot be deceived for long on questions which vitally affect them.

It is not due to the demoniacal powers of Press lords that the masses of workers in this country back the policy of imperialist expansion and defence. It was because they benefited from it that they broke up the pacifist meetings during the Boer War. People are now inclined to say that they were grossly deceived in 1914. But after the war had broken out, they were faced with two alternatives. Theoretically, of course, the British people could have gone socialist and allowed capitalist Europe to settle its own quarrels. Alternatively they could defend the Empire. Peace would have been preferable to the British people, but it would only have postponed the struggle in the interest of Germany, which would finally have choked the Empire. Or, as Machiavelli says: "I say again we should never submit to an evil merely to prevent a war; in fact we do not thereby avoid it but only defer it to our great injury."

For long periods the masses may appear passive and their emotions may seem imperceptible, but eventually, as Metternich found in 1848, they burst out with greatly increased energy. Therefore, a more clever ruling class is very careful to preserve safety valves and to make concessions at a time at which they still appear as actions of free will. Witness the National Government and the Unemployment Act.

The weight of the masses is different in different social and economic systems. Concrete differences occur at different times. In some periods history does not concern the masses at all, and this is the case in practically all predominantly agricultural countries. "Up to our own time, the vast majority of the inhabitants of the world lived in little, almost self-supporting villages. If an Empire broke up, some of the villages might be wasted by war, but the rest, like the cells of a divide rotifer grouped themselves easily enough as part of a new body."[1]

The agricultural masses have no history. Therefore the Indians, who had a greater sense of proportion than we have, to the great regret of our scholars have never written the history of India, because nothing important had happened. The Indian sages did not consider it of any special importance that one petty king ruled or another.

On the other hand, different societies are, as a matter of course, more or less favourable to the development of full individualities. Mommsen said of Rome: "It was not the genius of the individual which ruled at Rome and through Rome in Italy, but the one immovable political idea which was perpetuated in the Senate from generation to generation. In the Roman community, no individual was specially important, neither the soldier nor the general. The rigid discipline choked all individuality. Rome became great like no other state of antiquity; but it paid for its greatness by sacrificing the delightful variety, the convenient easy-going, the inner freedom of Hellenic

[1] Graham Wallas: *The Great Society*, p. 12.

life." Dazzling personalities like Themistocles and Alcibiades could not thrive on the heavy soil of Rome and its amazing level of average ability.

I must leave matters here. A very subtle analysis of the different shades of reality is necessary, but this can be done only by writing history itself. The quality of historical understanding must, as we have shown, suffer by taking the rigid opposition of the masses and leaders as an eternal law of history. A greater sense of proportion is needed. History is like the sea: the waves on the surface vary with every little breeze that blows, but it needs long and deep research to find the constant currents below.

The Masses Depend on Leaders

No statement which has been widely accepted can be without some element of truth.[1] These well-known declamations about the impotence and foolishness of the masses must have some foundation in truth. The difficulty is to find it. The masses have almost always been separated from the administration of public affairs. The actions of the mass cannot take shape on their own. The masses are accustomed to rely on others to carry out their demands. Not only do the leaders depend on the masses, but the masses depend on the leaders. In this respect a very interesting social experiment has now been carried on for seventeen years. In the initial stages of the Russian Revolution the masses, through the system of councils, or Soviets, were intended to run the country by themselves.

[1] See Chapter XI.

"The creative activity of the masses," the organisation of the country by the masses themselves, has been given by Lenin as the fundamental of communism.

The American negroes were emancipated whilst taking no interest in the proceedings. The result was that they were nearly as badly off after as they were before their emancipation. The Russian workers had reached a greater degree of consciousness. But, to take another example, it is interesting to discuss what in Britain is the main obstacle to socialism. Socialists themselves think that the workers have no great and very urgent desire for socialism, because they are unreasonable. In actual fact it is because they have no interest. The workers feel that the advantages of socialism will bring them one serious disadvantage: the ownership of the means of production also implies the responsibility for the management of affairs. For this reason the idea of the responsibility of the workers themselves is carefully omitted from the propaganda of the socialist mass party, which owes its popular strength as well as its political impotence to this omission.

Prophetically, Rosa Luxemburg wrote from her prison in 1918 of the future of Soviet Russia: "With the suppression of political life in the entire country must also come the gradual destruction of the Soviets. Without universal franchise, the liberty of the Press and assembly, and the unhampered struggle of opinion, the life of every public institution withers away, and bureaucracy alone remains as the active element. Little by little will your public life be lulled to sleep. A dozen party leaders, full of inexhaustive energy and

boundless idealism will direct and govern. From time to time, a picked section of the workers will be invited to the meetings. There they will applaud the leaders' speeches and say 'yes' to prepared resolutions. In other words you will have the rule of a clique—not the Dictatorship of the Proletariat, but the dictatorship of a handful of politicians."

It has been the custom in some circles to explain the later evolution of the Russian Revolution by the wickedness of one person, of Stalin. In this case, however, it is obvious that vast social and objective forces are responsible. The attempt to achieve socialism started with a minority. The large majority of the peasants were hostile to it. The result of this equilibrium of forces has been translated into political practice by Stalin, who made the best of objective possibilities.

So we also see the other side: not only does the leader depend on the masses, but the masses need a leader. Certain types of masses are more dependent upon their leaders than others. These then create a bureaucracy. So it was in all the social-democratic parties. So it was also in the U.S.S.R. We must here leave open the question as to whether in the U.S.S.R. the bureaucrats are a new class or an "ulcer" on the body of the working class.

CHAPTER IX

CONCRETE RESEARCH AND ABSTRACT GENERALISATIONS

WE now leave the law of the unity of opposites and turn to the first two laws of scientific method. We have to isolate whatever we study, but while isolating it we should not forget to keep an eye upon the concrete context which relates it to other events. Concrete analysis of a phenomenon in the context in which it stands reveals the modification which it is continually undergoing by interaction with its constantly changing environment. So long as we regard a thing as isolated—that is to say, unconcretely —as something aloof from the rest of the world, we shall be inclined to overlook and neglect its changes. This is the connection between the first and second laws of scientific method. Admittedly, these pronouncements sound mysterious; this chapter and the following one are intended to make them clear. It is the purpose of these two chapters to show that political institutions, moral values and theoretical ideas are fully understood only when seen in their concrete context, in their relation to the economic basis upon which they stand, and in their place in the flow of historical development by which they are continually altered.

The second rule of scientific method demands that we study everything in its movement and develop-

ment. We readily apply this principle to matters which have for us no special emotional value, and the theory of evolution has managed to permeate the explanation of all events that take place in organic and inorganic nature. That natural events change, and that they can be studied fruitfully only in their change, has become a mere commonplace. The more intensely, however, we cherish an object, the more reluctant we are to admit its change. In this way intense worship of God removes him from change and mutability. Admirers of the "Mona Lisa" or of Homer will never admit that these works of art are perishable, and that their value is only a relative one; they will believe in their eternal and incomparable perfection. The more we care for our own moral and scientific ideas, the more we cling to them as to immutable, invariable, absolute and eternal realities.

We witness here the age-long conflict between religious and scientific approach. Scientific method guides that knowledge which seeks to master and control. Religious knowledge does not control but console. For centuries representatives of religious opinion objected to science because it destroyed reverence. They looked upon each fresh gain of the earth as so much robbery of heaven. They were quite right. We cannot desire to master what we revere and adore. In the *Brave New World* which is Aldous Huxley's vivid conception of the state of complete human control over the world, everything appears degraded. The conflict between respect and desire for control is insoluble. The one side can only gain at the expense of the other. God is driven out of all those

regions of the world which man has brought under his control. This is one of the numerous instances of the "unity of progress and regress." Whilst gaining control, we lose religious enthusiasm. We may well argue that religion is an opium, a drug, but can we dispense with it? Religion is useful to many of us so long as our control of the world remains limited. Its function is to console us for our lack of that control. Religion is not likely to die soon, and even its most thorough opponents, the communists, could not work without a substitute which looks very much like the original.

Democracy

Perhaps we had better try out the method, first of all, upon a rather harmless example. Let us choose democracy, because the facts are easily ascertained and the result is not especially startling. If we are learning to handle an instrument, we begin with easy and simple tasks; similarly it is necessary here to make the meaning of the first and second laws evident from a simple and non-controversial example. The exact meaning of this clumsy but indispensable term "concrete," particularly, needs further elucidation. In the next chapter we shall then proceed to more controversial questions.

We should not forget, however, that mention of democracy does arouse an emotional response in the minds of many. If you turn to the article *Democracy* in the *Encyclopædia Britannica*, you will find no scientific analysis but a display, rather, of stale emotions.

Abstract and Concrete Concepts of Democracy

Abstractly, a constitution can be defined as democratic if it gives equal rights to all citizens. Democracy is government by the people for the people. The abstract idea of democracy can be the object of an almost religious fervour and worship. Less than twenty years ago millions of people gave their lives "to make the world safe for democracy."

Democracy in this abstract sense, of course, never was a concrete reality. We gain the concrete concept of democracy by inserting into the definition given above a clearer explanation of the terms "citizen," "people" and "equal rights."

What has actually existed has not been any abstract "democracy," but concrete democracies which have differed considerably. In the Teutonic Clan, in Athens, Rome, the Mediæval Free Towns, England and the U.S.A., in each case "democracy" meant and means something different. Concrete democracies only can be the subject of scientific study. What, in all these cases, do we mean by the term "people"? Political rights have been granted to only a fraction of the entire population. In the Teutonic Clan the "people" were the free warriors, women and slaves being excluded. In Athens and Rome the free men of the city, and later on of the surrounding areas, could participate in the rule of the Empire, but the majority of the population, the slaves and the inhabitants of the conquered provinces, had no political rights. In the Mediæval Towns democracy meant the rule of the merchants and artisans, but not of the apprentices nor

of the peasants of the surrounding area. In England, democracy has repeatedly changed its face. Until 1832 the "people" comprised only persons of landed property. In 1832 industrial property conquered the right of citizenship. In 1867 the electorate was extended to the higher strata of the working class, but not until 1929 were all persons over twenty-one years of age, of both sexes, enfranchised,[1] and all property qualifications dropped. The native races of the Empire are still deprived of the full rights of citizenship.

If we can believe *The Times*, democracy is "government by discussion." But the all-important question in this respect is: Who takes part in the discussion? We have just seen that the circle of those possessing that privilege varies considerably. The range of questions which are actually decided by discussion is also subject to continual alteration. In a democracy the "people" rule themselves, either directly, as in the small city-states of Greece, or through their representatives, as in the big modern nations. Much depends on the power of the institution which represents the will of the citizens, be it the Thing, the People's Assembly, the Guild, or Parliament. In Rome, for instance, the People's Assembly could do no more than confirm or reject the proposals of the Senate.

[1] The following figures show the percentage of the population entitled to "citizenship" at different times:

	Electors.	Population.	Percentage.
1832	1 million	24 million	5
1867	5.0 ,,	35 ,,	12
1884	2.5 ,,	30 ,,	37
1918	21.0 ,,	42 ,,	50
1929	29.0 ,,	46 ,,	60

Everyone is familiar with the varying range of power of the House of Commons in English history. We cannot, however, enter into a detailed analysis of constitutional points.

It is, however, necessary to say something about the concrete meaning of the term "equal rights." This is an essential element of the concrete definition of democracy.

What are "Equal Rights"?

There is no denying the fact that in England, even to-day, all citizens have not the same rights. Inequalities and privileges of birth and wealth render futile their claim to an equal share in the direction of the State. The influence of the 769 members of the House of Lords stands in no proportion to their number; they use their power effectively to check the will of the people when that will happens to favour the Liberal or the Labour Party.[1] At the same time, it is a commonplace that in the operation of modern democracy the possession of money is a powerful factor. Constituencies naturally prefer candidates who can afford to pay their own expenses and even contribute to party and welfare funds. Not only in parliament but in the street money can buy a voice that can be heard in the noisy turmoil of modern party democracy. Those citizens who can afford the outlay necessary for owning newspapers, for hiring big halls, even for acquiring the advantages of a better education, obviously will have a chance of being heard and

[1] See A. L. Rowse, *The Question of the House of Lords.*

represented which stands in no proportion to their number. Incidentally the absence of proportional representation sometimes brings about strange results: in 1931, for example, 28,000 citizens sent one delegate to the Government benches, while each member of the Labour Party opposition represented 180,000 citizens. Similarly, in the U.S.A. Wilson became President in 1912 on a minority vote. Finally, if the masses of the people should acquire socialist ideas, the weight of money could still further frustrate their will; should the majority of the people decide to take socialist measures, big business would threaten the country with the extra-parliamentary measure of a financial crisis.

Pure and Impure Democracies

Thus we clearly see that *pure* democracy has never yet existed. No social event or institution ever exists in a pure state. Fervour for democratic institutions may induce us to regard these undemocratic factors as accidental and negligible. Everything depends, however, on the quantity in which the anomalies pollute the pure form. A concrete democracy may include so many factors that are contrary to the idea of democracy that in actual reality it is not only very different from, but almost the opposite of, what it pretends to be.

Aristotle defined democracy as the rule of the poor. If this were correct, the poor would at once use their political power to confiscate the wealth of the rich. Democracy, at its best, may enable the poor to increase

their political influence, as it did in Athens. Athenian democracy has been the object of many calumnies, but it remains true that the world's most brilliant people, during its most brilliant period, for 170 years, managed its affairs, and managed them well, through a public assembly in which all citizens took part, and which was a "mob" with neither President nor Prime Minister. Although the poor were in the majority, they did not rule. Only occasionally did they confiscate the property of the rich. The majority of the officials belonged to the well-to-do families and unenfranchised slaves were the real "poor" of the Athenian State.

In 1832, political power in England was transferred to the trading bourgeoisie. Ever since then English democracy has represented the rule of the plutocracy or financial oligarchy. The poor are, in practice, restricted to the fight to gain certain concessions. These concessions, for the ruling class, are cheaper than would be a still stronger police force and army, both of which would be necessary to repress the revolts which would follow a rigid and persistent refusal to carry through popular demands. In a modern democracy, the average citizen has more liberty, but *en masse* it is doubtful whether he has more influence than in a modern dictatorship.

Further, we can easily observe that the *concrete* features of each democracy are determined by the *economic conditions* prevalent at the time. Not only is the constitution of a country strongly influenced by economic factors, but, what is more important, the distribution of economic power strongly influences

the way in which the constitution works and is interpreted.

Parliamentary and Working-Class Democracy

It is interesting to note that we do not in the least mind admitting changes in concrete democracies in the past. This attitude changes, however, when we come to our own time. Many persons in England regard parliamentary democracy as the final and most perfect, as the only conceivable type of democracy, and the possibility of another form of democracy never enters their heads. They can conceive of no further radical change in democratic institutions. They overlook the possibility of working-class democracy, as advocated by syndicalism,[1] and by bolshevism in its early stages. Working-class democracy objects to the constituents being united on a merely geographical basis. It objects to political parties of the old type. "In such a party, men from all the social strata elbow each other, exchange vague and sterile platitudes, and attempt to harmonise by insincere compromises their essentially antagonistic interests," said one of the leaders of pre-war syndicalism. The democracy they envisage is foreshadowed in the mediæval town-

[1] When syndicalism came to England before the War, the parliamentary democrats reacted in an interesting way. Snowden said in 1911: "Syndicalism is the maddest thing outside a lunatic asylum." J. R. MacDonald: "The hospitality which the socialist movement has offered so generously to all kinds of cranks and scoundrels because they profess to be in revolt against the existing order has already done our movement much harm. Let it not add syndicalism to the already too numerous vipers which, in the kindness of its heart, it is warming at its hearthstones."

guilds. Decentralised councils put into the hands of the masses a more direct participation in government. We are not concerned here with the merits of this scheme. We only mention it because it is so easy to lose sight of its very possibility.

CHAPTER X

CHANGES IN NATIONAL CHARACTER AND MORAL IDEAS

THE NATIONAL CHARACTER

A nation and everything connected with it may stand as another example of the "eternalising" desires of the mind. National and nationalist affections tend to regard the qualities of their nation as eternal and unchanging entities. The stronger the nationalist passion the greater the desire to immortalise the nation. A Japanese newspaper recently remarked that "our national policy is as eternal as the Heaven." In a similar manner Hitler speaks lyrically of the "eternal German soul," and Mussolini of "eternal Rome." Similarly must King Ashur-bani-pal have spoken of the "eternal Assyrian."

The *Sunday Pictorial* recently gave an amusing instance of this type of thinking: "Our frontiers, bounded by the merciful sea, have in His goodness been laid down by Almighty God, and they will remain fixed, immutable and inviolate, please the Lord! until the end of time." The author not only forgot the Irish Free State, but also the indubitable fact, taught even at school, that it is only since 1707, since the union of England and Scotland, that "our frontiers" are the same as those of the island.

Under ordinary circumstances English nationalism is devoid of the hysterical exaltation we meet in

nations like the Czeks and the Germans who are like adolescents, less sure of themselves than we are. Englishmen are convinced that they live in the best and greatest country in the world, but they will not tell you so because they think you know it. They will refrain from boasting of the eternal value of their national characteristics. It is in more implicit and veiled forms that we often meet with the tacit assumption that the British national character is something fixed, stable and permanent.

Obviously the British national character has not fallen from heaven. It is the product of certain material factors, of the blending of races, of geographical conditions, of the occupations prevalent among them. With the change of these factors which produce it, the British national character also will change. It is not made once and for all. Englishmen will not retain for ever and at all times the qualities they once had.

Of course, a certain fixity and stability does exist. But it is not absolutely rigid. A careful survey of English history would show that our national character has undergone considerable changes in the course of centuries. Everyone knows of the momentous change from agricultural merry England, "full of mirth and games," to the commercial Puritan England. English people now are perhaps the most law-abiding in the world; but during the Wars of the Roses they became accustomed to a complete state of lawlessness. Formerly they were once considered to be Europe's worst drunkards; but in the twentieth century their control of intoxicating liquors has made England a

comparatively sober country. Observers testify the change from the former levity to the present bull-dog tenacity, just as others lament the submerging of that tenacity in "the flood of post-war laxity."

The lack of interest in theory and general ideas is regarded as a trait of the British national character, but it is worth noting that this trait lay very dormant in the critical times of big social changes, during which men are not guided by a discredited tradition but only by new ideas. Matthew Arnold remarked that "in the Elizabethan age, English society at large was accessible to ideas, was permeated by them, was vivified by them." That was the time when England changed into a commercial country. Later on, from 1775 to 1860 the problems arising from the Industrial Revolution could not be dealt with by cheerfully "muddling through." The theories of Smith, Bentham and Mill were more than academic speculations; they pervaded the social life of the nation and "gave to the ministry, the parliament and the people, the ideas and the formulæ which would help to recast the law and the Government, and to readjust the system of economics."[1] From these general and abstract theories statesmen like the younger Pitt, like Peel and Gladstone, derived the inspiration of their actions.

How many so-called anti-fascists in Britain console themselves with the reflection that the British national character will never tolerate a violent form of fascism. They do not see that, at the moment, there is no social necessity for violence, owing to the stability of British capitalism. "We are making our changes in our own

[1] Barker, p. 237.

way. Look how the French Revolution was received in England and how the same process was carried out by gradual, slow and piecemeal reforms." About 1800 there was, in fact, no need in England to kill the king and destroy violently the power of the feudal aristocracy in the interests of an industrial society, because this had already been done 150 years before. In times of crisis, when a social necessity arises, the British national character may also live up to this necessity, as it did in 1640, and may well demand a more violent form of politics. The relative prosperity, stability and freedom which Britain gained during the last two centuries, due largely to its insular position, industrial monopoly and to its possession of the largest Empire in the world, makes British people less inclined to extreme and radical measures. Formerly described as churlish and quarrelsome, they have become rather easy-going and tolerant of one another. But if their standard of living should drop suddenly, they may conceivably begin to treat one another as they have treated the Irish for centuries.

Like the physiognomy of an individual, the character of a nation, its attitude to life and its way of solving problems, is difficult to define accurately and unambiguously. We must refrain from further discussion of the intricate questions connected with national character. Professor Ernest Barker has written a standard book on the subject, in which, in general, he admits that national character is modifiable but tends to stress the permanent trends and pay only scant attention to the changes. It would be useful if someone would study the national character both in

permanence and in change, in unity and in diversity.[1] Only this would give a concrete and well-balanced picture. Professor Barker finds the British national character specially inclined towards the idea of balance. Since balance between opposites is also an essential aspect of scientific method, the dialectical method should be easily comprehensible and palatable to English people.

Moral Ideas

What has hitherto appeared as a commonplace, scarcely worth stating, will provoke considerable opposition when we now apply scientific method to moral and scientific ideas. The teaching of religion, morality and respect for the law have implanted in our minds a belief in eternal moral values. But nobody who cares to study in their concrete history the actual ideas men have of justice and morality, can overlook the fact that they change continually and differ in different societies. Moral demands appear to be immutable only when credited with an abstract existence apart from the rest of human activity. To study them concretely means to study the behaviour which actually has in the course of history met with social approval and disapproval, with moral praise or indignation, blame or punishment.

The application of scientific method to this field usually provokes resistance and resentment. What is

[1] This is obviously an instance of the law of the unity of opposites. This law is also significant for the study of national character, which must always be regarded as an unity of opposite elements and qualities.

easily conceded, what is even regarded as a matter of course, in political institutions, is decried with regard to morality. Morality is regarded as independent of and superior to the rest of social activity, guiding it without being formed by it. It is, as we may call it, regarded "unconcretely." The precepts of the Bible are as valid to-day as they ever were, because they permit an unbounded range of possible interpretations, because they are neither clear nor unambiguous. Every person has read into them what he has preferred.

In face of all the facts of history philosophers do not tire of the attempt to preserve the eternity of moral commands by the most abstruse devices. They are reinforced by a misguided instinct for self-preservation on the part of society, which seems to assume that moral demands can be enforced only when regarded as absolute and invariable.

Homicide

Very abstract demands, treated unconcretely, can be mistaken for eternal and invariable commands. "Thou shalt not kill" can appear as an immutable demand only when taken as an empty and meaningless formula, only when abstracted from the concrete consideration of the person who kills and the person who is killed, and the circumstances in which one person kills another. All these concrete contents of the moral demand itself, when considered concretely, when regarded in the only real and effective sense it has, is different in each society.

All societies restrict the taking of human life. Homicide, as Westermarck says,[1] is everywhere prohibited "within a certain circle of men." But the radius of the circle varies greatly. It is everywhere meritorious to kill in the interest and at the demand of the social group. War is one of the main "exceptions." We all know of the embarrassment and the conflicts into which the Churches are forced during wars. All societies pursue war with a good conscience; all of them praise the men who kill many of the enemy. Only a difference of degree separates feudalism and capitalism in this respect, feudalism regarding war as the highest good, and capitalism regarding it largely as a necessary evil, in consideration of its cost and the interruption of international trade it involves. The successful warrior is held in the highest esteem, for to acquire military glory by destroying lives is the highest aspiration of many social groups. Even in modern times we erect more statues to successful generals who destroy human life than to the men of science who save it.

This "exception" is an essential part of the concrete moral command. Viewed concretely, the sixth commandment therefore changes when the interests of the social group change. For the motives of wars obviously change continually with the economic interests of the groups.

This is not the only qualification to which the abstract demand is subjected in concrete reality. Everywhere the life of the foreigner is regarded as less important than the life of a countryman. In tribes in

[1] *The Development of Moral Ideas*, I. 331.

which commerce plays only an unimportant part, almost all foreigners may be killed. In countries which are based on slave-labour the slaves are mostly prisoners of war and can often be put to death without violating morality or law. The exact definition of a foreigner varies with the social unit, whether that be a tribe, a city or a nation. The treatment of the foreigner varies with the mode of economic life of the group and tends to improve the more commerce develops.

As a general rule it is forbidden to kill members of the same group. In actual and concrete practice, in many cases the killing of members of the group receives the moral sanction of the community. At the present time this is the case with regard to capital punishment. Many societies put an end to those who are a burden to the group, to the old and sick, and to the weak, illegitimate and deformed infants. This is plain common sense in nomadic hunting tribes, where decrepit persons are not able to keep up in the march. Infanticide, where it is practised, has quite plain and obvious economic reasons: it is a form of birth control, a method of keeping down the population and so preventing starvation within the group. Further, owing to the absence of soft food and animal milk, the suckling time extends to three or four years; this embarrasses the mother as soon as a new child arrives. Also, the women of these tribes do much work and are encumbered by too numerous children. We ourselves owe our horror of infanticide to the absence of all these conditions and not to a higher sense of morality.

At the same time it is largely a matter of taste

whether we kill the old people or let them live. The Hottentots argue, when missionaries inform them that it is inhuman to kill old people: "Can you see a parent or a relative shaking and freezing under a cold, dreary, heavy, useless old age, and not think, in pity for them, of putting an end to their misery by putting, which is the only means, an end to their days?"[1] We have no criterion by which to decide whether the missionary's or the Hottentot's view is morally superior. What is inhuman to us is human to them. We ourselves have doubts as to the charity of keeping alive persons suffering from incurable diseases. Many experts are already beginning to argue in favour of some form of infanticide. We pay for our humanitarian instincts by a growing burden of inferior people.

These observations might be added to by mention of the vendetta, the practice of human sacrifice, duelling, the burning of widows (suttee)—actions which are, under certain social conditions, morally approved. At any rate, when we look at morality as it is we must admit that it varies with society. We can easily see the connection between the first and second laws of scientific method: as soon as we concentrate on the concrete forms of moral commands, their change becomes a matter of course. For further study of this problem the reader is referred to the excellent work of Westermarck, *The Origin and Development of Moral Ideas*, which gives a great wealth of further illustration.

Most readers will be inclined to escape from this

[1] Westermarck, Vol. I, 389.

consequence by talking about what morality *ought to be*. But we would approve those actions which we condemn as barbarous if we lived in the society in which they are practised. For they are forms of adaptation of society to its needs. That is also what our own moral ideas are and what they can be at their highest. Of course, all of us can utter high-sounding and grandiloquent moral demands, but these remain fine talk and can never become concrete reality so long as economic necessities are against them. All talk about the duty of brotherly love is of no avail against war so long as certain people have a material interest in waging war. We should not flatter ourselves that we are able to achieve what nobody has ever achieved; nobody can get out of his own skin, much as he would like to. Moral practice can liberate itself neither from the concrete society nor from the historical circumstances in which we live. There will always be some enthusiasts who will believe that they can reach the stars and the Absolute; but they usually overlook the difference between establishing a moral rule and fulfilling it.

Applications

The application of the first two laws of scientific method to moral philosophy is not without its practical consequences.

Many individuals who live in a continually changing society and believe in the invariability of moral commands have suffered severely from the conflict between the old demands of morality and the new demands of

society. A case in point is the changed attitude towards sex relations before marriage. During the last twenty or thirty years a change has become economically necessary and technically possible. Statistics show the lapse of a growing period between sexual maturity and economic independence or capacity to support a family.[1] Three men out of five between the ages of eighteen and thirty-five are now unmarried. It is chiefly the middle class, the stronghold of moral sentiments, which has been affected by this change. In England and Wales the surplus of women was 1,200,000 in 1911 and 1,800,000 in 1921. These circumstances necessarily have compelled many to choose between happiness on the one hand and respect for traditional conventions on the other. At the same time the technical advances of birth-control have removed difficulties which stood in the way of free sexual relations. In the long run, the adaptation to the changed conditions was effected, but, impeded as it was, in the name of eternal moral laws, it was accompanied by frictions which made the change unnecessarily painful and led to much personal unhappiness and many mental disorders. A sense of guilt, with its demoralising and degrading effects, for a long time harassed many that were not entitled to social recognition and respect. All this waste of mental energy and happiness was avoidable had public

[1] Average of males at marriage in England and Wales:

	1890—92	1930—32
Under 21	6 per cent.	5 per cent.
21—25	36	32
25—30	29	38
30—35	10	12

opinion fully realised that moral demands vary with social conditions.

The cases are numerous where individuals suffer in mental health from an attempt to live up to eternal commandments which frequently derive their very dignity from being contrary to the constitution of human nature. Their souls are stained by the scrupulousness with which they watch their own actions and motives, and by the sense of guilt which ensues from the discovery of their inadequacy. They would lead a happier, fuller and richer life if they would realise that that only is morally good which is socially expedient and which contributes to the development of personality.

Our criminal laws, our treatment of criminals, are still imbued partly with the mediæval idea of revenge, of punishment for moral sins. A community can deal with the problem of criminality only if it will realise that it is a social and not a moral problem. Russia's treatment of non-political criminals might be a model to Western countries.

Finally, the unscientific view of morality frequently operates as a direct obstacle to the control of society. Every one of us knows of instances of people enduring circumstances and conditions on the ground that they ought not to be. We are very fond of resting on the soft cushion of what ought to be and then leaving things as they are. We are too much inclined to imagine that the evils of present-day society can be remedied by reiterating some eternal moral command which condemns them. For instance, we are inclined to believe that to preach universal love as an eternal

command is a remedy against war. Christians are prone to say that Christianity has never failed, that its failure was with those who neglected to apply it. Nevertheless, like all eternal moralities, it failed to make itself applied; therefore it has done more to console us for social evils than to control them. Moral demands are very noble, but they are impotent. Only an appeal to social interests can change anything in reality and so lead to a control of society.

CHAPTER XI

THE UNITY OF TRUTH AND ERROR

Eternal Truths and Changing Views

OUR theoretical conceptions of the world also participate in the incessant change of social life. Naturally, we are aware of some "eternal truths" which are valid under all circumstances and at all times. "Eternal truths" are of two kinds. There are such dreary commonplaces as: "the higher the standard of public life the better for the nation," or "what we need is a good government," or "a cat is not a dog," and so on. To the second kind belong those sentences which merely translate simple observations into words: "Charles looks rather pale to-day," or "it was raining yesterday." Any one who denies them must be blind, under the influence of drink or of some strong emotion. Of more worthwhile sayings only mathematical propositions belong to the class of "eternal truths." The individual person may sometimes be mistaken about one or the other of these "eternal truths." The mistake is then due to oversight, haste, lack of concentration or some similar cause.

Most scientific views are, however, of a different type. They have been examined over and over again by many individuals. They contain no ordinary mistakes, due to oversight. So long as science merely restates simple facts of observation, the mistakes and

errors of one scientist are soon corrected by another. Professor Miehe of Berlin believed that he had found gold in a chemical compound which, he claimed, did not contain gold at the outset. It was easy for other physicists immediately to correct this error of observation and to show that the gold, being inserted inadvertently into the retort, could later on easily be found therein.

But science is more than a heap of facts. A scientist pays with sterility the attempt to find security by refraining from going beyond the mere accumulation of facts. Science aims at statements of a certain degree of generality. In its laws and explanations the scientific, like the ordinary mind, always goes beyond what immediate observation justifies. Most relations between facts have been once, and can become again, controversial. In this way the vast body of our convictions is subject to perpetual historical change.

We should like to see ideas, as Plato did, outside the spell of time and change. Platonic ideas, however, share with Platonic love the slight fault that their existence cannot be traced. Truth is the daughter of Time. That ideas change is a simple fact of observation. There is not one theoretical or scientific statement, say of the eighteenth century, which is still accepted as true, which has not undergone considerable correction and modification, and which, in many cases, has not proved to be predominantly erroneous. Even the Newtonian rock did not withstand the test of time. Although we are inclined to combine a contempt for the opinions of our forefathers with an admiration for our own, we must assume that our own views also

will share the same fate. We scorn the ideas of the Victorian age, but we ourselves will be the Victorians of to-morrow. What *we* think is only true and significant for our own time. We must see not only others but also ourselves in the process of history. We are made of the same stuff as they are.

Truth (with a capital T) is perhaps unchanging and eternal. But this is irrelevant, since we have it not. We have only what we think to be true, and that is never as true as truth. "For truth is precious and divine—too rich a pearl for carnal swine," as the author of *Hudibras* informs us. We possess only truth intermingled with error.

Truth and Error

It would be mistaken to believe that truth and error merely exclude each other. It would be wrong and incomplete merely to say that the true is not false and that the false is not true. Undue attention to the mutual exclusion of these opposites may easily make us forget their unity. Truth and error change into one another. Truth and error co-exist, are together in practically any statement or doctrine.

It is first necessary to deduce the unity of truth and error in a general way. A mere proof by examples would convince nobody. For each of the instances in which I prove the unity of truth and error, the reader will produce dozens of convictions so near to his heart that he perceives in them no error, and dozens of opinions of which he disapproves so much that he can find in them no grain of truth. Later, I shall illustrate

the general deduction by some examples taken from the history of science in which both truth and error are approximately known.

All our knowledge is limited. Whatever we say reflects concrete reality only inadequately. We have to concentrate on one side only or, at least, on a limited number of aspects of a concrete event. Everything, however, is inter-related. Everything is conditioned by everything else. "Thou canst not stir a flower—Without troubling a star." To know the full truth about one thing is to know its relations to everything else. Until our knowledge of the world is all-comprehensive, our knowledge of each object remains incomplete. We single out some of the aspects of the thing and some of the conditions that bring it into being; we neglect others which we either overlook or reject as unimportant or negligible. When, in the history of thought, the angle changes from those things which are viewed, the neglected parts of reality may come into the foreground; the statement which was true then will reveal the element of error that was hidden in it. In this way, in the course of development, true assertions become false. An idea may suit the demands of the time; it never is fully true compared with the full extent of concrete reality. Our convictions are like a ruddy apple which must be cut in halves before we can tell which portion contains the worm; mere theory cannot perform the cut. The theory or conviction must be carried into the practical world. Then the erroneous side of a theoretical statement comes into conflict with practice. Practical defeats make us feel the inadequacy of the statement.

The entire history of science consists in replacing one approximate truth by another. Galileo discovered that the fall of bodies can be described by the formula:

$$v = u + gt^1$$

He calculated g, the constant acceleration, as 981 cm. per sec. Later research revealed the incomplete, unconcrete, erroneous side of his description. The value of g was found to vary at different places, largely with the distance of the place from the centre of the earth. To make the description more complete, other factors, like the flattening of the earth, its unhomogeneous constitution, and the differences in altitude must be brought in. These corrections had to be added to the initial, unconcrete statement, that all bodies fall with the same velocity in a vacuum. It is quite certain that the list of necessary qualifications is not even yet exhausted.

For many centuries scientists attempted to discover the organic basis of thought. In the nineteenth century they found that "we think with the brain." But this was only a half-truth. Our blood circulation is also involved in the thinking process. Therefore, among other things, we can get a headache after thinking too much. This, incidentally, shows the relative truth in the findings of those, who, like Aristotle, located thought in the heart. The American psychologist, J. B. Watson, drew attention to the importance of the larynx for the process of thinking, and in my German book[2] I have shown the significance of the hand and of the general constitution of the body. The more we

[1] v = velocity; u = initial velocity; t = time.

[2] *Der Satz von Widerspruch*, 1932.

probe into these secrets, the more do we find that the whole body is in movement when we think. We are only beginning to see more clearly the innumerable organic factors involved in thought.

Many diseases are attributed to infection by germs. Pasteur made a great discovery when he found that diseases were created by germs. In this form, however, the truth is expressed very incompletely, as is now known. In order to infect us the microbes must be "virulent," whatever that may mean, and the organism must have a "disposition" for the disease, whatever that may mean. Perhaps also the weather, the humidity of the soil, the level of the water both above and below the ground have something to do with the infection. When scientists discovered the germs they believed they had hit upon the cause of many diseases. In actual fact, they found only one condition out of many.

Engels[1] shows the same condition for "Boyle's law." Boyle (1627–91) found that the volume of a given mass of gas at constant temperature is inversely proportional to the pressure to which it is subjected. Regnault (1810–78) discovered that the law did not hold good in certain cases. If he had assumed that truth and error are rigidly opposed he would have argued: "Boyle's law is changeable; it is, therefore, no genuine truth; it is thus no truth at all; it is false." As a scientific person, however, he did not argue in this way. Instead of rejecting the former law, he corrected it, showing that it was true, but only within certain limits, only under certain conditions. Later research

[1] *Anti-Dühring*, 86-87.

has further multiplied the conditions under which alone Boyle's law holds true.

For reasons of space, I cannot more than touch on two further points. Some readers will probably object that I take the term "error" in too narrow a sense. They will say that a statement is frequently not erroneous because it *leaves out* something, but because it *misrepresents* something, represents it differently from what it is. Inadequacy and ignorance, however, obviously involve falsification. All aspects of a thing or event are interrelated; the discovery of new aspects will further modify those which we know already. It is inadequate and unconcrete to say that the earth is flat; we may represent on a map the surface of the earth as it appears on the assumption that it is flat—in this, in the Mercator projection, those parts which are distant from the equator, will be distorted and their size falsely represented.

We have to add one further remark. Our convictions, so far as they concern social events, will be unconcrete not only because the extent of our knowledge of facts is always limited, but also because our minds are narrowed by our interests. Our thoughts on social questions are weapons in the social struggle, and serve the material interests of some social group.[1] An axe need not be comprehensive but it must be sharp. Our predeliction for certain practical solutions of social questions limits our outlook, renders our views one-sided, compels us to ignore, to a greater or smaller degree, what has no connection with our peculiar group interests. Interest excludes totality.

[1] See Chapter XIV.

Relative ignorance is inseparably linked up with our nature as acting and striving beings.

Practical Consequences

Scientific thought knows no certainty, but only varying degrees of probability. To be cocksure is to be unscientific. The progress of science was frequently held up by the dogmatism of established scientists. We need only remember how Lister, Freud and dozens of others had to struggle against the contempt of their fellow-scientists. When absorbed by the ordinary brain, scientific statements become even more rigid. But the full realisation of the unity of truth and error will teach us modesty, insight into the limited validity of our own views, and tolerance for the views of others.

Also our attitude to "false" statements, that is to statements which we deny and oppose, can gain by applying scientific method. We can refute and combat our opponents effectively only after we have seen the element of truth and logic in what they believe to be true.

Hegel maintained in his *History of Philosophy* that all philosophers of the past saw some part of concrete reality. We cannot refute what they saw. We can only reject their claim to have given the whole truth about concrete reality. "This refutation occurs in all development. The development of the tree is the refutation of the germ; the blossom is the refutation of the leaves (and proves) that they are not the highest and true reality of the tree; the blossom is finally refuted by the fruit. But the fruit cannot become real

without all the former stages preceding it. The attitude towards a philosophy must, therefore, contain an affirmative as well as a negative side. Only when we consider both of them, have we done justice to a philosophy."

No statement which has ever satisfied a number of otherwise sane and reasonable persons can be completely false, absurd and devoid of any foundation in reality. We can say generally that each erroneous statement contains some grain of truth, because it reflects some side of concrete reality. It must have some basis in concrete reality, be it ever so small, in order to exist and to be held true. What is now recognised as wrong could formerly be believed only because of the true part which was actually in it. There is much sense in Roman Catholicism, even in the Nicene Creed, and much psychological wisdom which makes it acceptable to so many persons and keeps it alive. The same is true of the magical beliefs, of the "unreasonable superstitions" of "primitive" or agricultural races.[1] The ancients believed that the earth was flat; they could well do so, because, as Eddington[2] says, "the small part which they had explored could be represented without serious distortion on a flat map." For a long time alchemy was regarded as a good instance of the aberrations of the human mind, and the alchemists were labelled as nonsensical fools, but recent chemical research has vindicated them in many points. The fundamental

[1] See the author's paper to the Aristotelian Society 1935, on "Social implications of logical thinking."

[2] *The Nature of the Physical World*, p. 117.

unity of matter and the transmutation of metals have ceased to appear absurd. Furthermore, we must not forget the numerous discoveries which the alchemists made, like porcelain and Glauber's salt, for we now understand that discoveries of this kind were less accidental than was assumed only twenty years ago. Everybody bases his convictions on some facts; and while showing his opinions to be inadequate, it is also necessary to realise the circle of facts which confirms them and for which they are adequate.

The history of thought shows clearly that opposing views have been vanquished effectively only by incorporating their parts which had some basis in reality. It must be noted, however, that the incorporation of parts of opponents' views must be an assimilation; they must become bone of our bone and flesh of our flesh.

The Roman Catholic Church made a habit of defeating heretics by admitting parts of their creed into its own creed. With the same tolerance it did not simply destroy heathen customs; it preserved them almost everywhere, imposing, however, a new meaning upon them. The counter-Reformation could gain ground only by taking up many justified demands of the Reformation itself. Lenin enriched Marxism by admitting some anarchist ideas—such as the idea of "Soviet" and "the gradual dying-out of the State"; this reduced the anarchists to political impotence. In 1920, Lenin could crush the Kronstadt revolt permanently only by incorporating the demands of the Kronstadt Communists for free trade when he inaugurated the New Economic Policy. In 1926 Stalin

could rid himself of Trotsky only by accepting tacitly several of Trotsky's views, while rejecting others. Fascism could defeat Marxism only after imitating it in many respects: it has been rightly said that Marxism is the Jewish grandmother of National-Socialism. Socialists will have to learn much from fascism before they can overcome the series of collapses and defeats which have marked their recent history.

In the political struggle we cannot answer with a flat denial or mere moral indignation the propaganda of our opponents. By so doing we would also reject the element of truth in their propaganda and, incidentally, confirm their followers in their views by exaggerating our own case. The propaganda of the allies made much of the claim that the last war was fought for the emancipation of the small nations. This statement was believed because of the relative truth it contained.[1]

Marx saw that it was not sufficient to make declamations against capitalism, its exploitation and sordidness, and he was careful to point out not only its negative but also its positive side. In powerful pages he described and denounced the misery and instability created by capitalist exploitation, yet he never lost sight of the progressive development of the productive forces of mankind which took place under capitalism.

Communist theoreticians assume that the fascists and the reformist trade-union leaders attract and hold the masses by their "demagogy." It would be a mistake to assume that the working-class followers of reformism or fascism are all dumbfounded individuals.

[1] See E. Wilkinson and E. Conzé, *Why War?* pp. 9-10.

It is not by the immorality of their means but by the relative element of truth in their teachings that reformists and fascists attract the masses. This element is, in the case of fascism, veiled under a cloud of obviously false and nonsensical statements. But it exists. It deserves more attention from the opponents of fascism.

CHAPTER XII

THE CONTRADICTIONS OF CAPITALISM

THE fourth law of scientific method relates to contradictions in the processes of nature and society. It will be long before contradictions become a popular instrument of thought; they have the disadvantage of being invisible, though not unreal. Many ordinary people who do not regard the invisibility of God as incompatible with his reality, are nonetheless suspicious, outside the religious sphere, of things they cannot see. In England this difficulty is accentuated by the tradition of sensationalist philosophy, unbroken from John Locke to the duller disciples of Bertrand Russell. This philosophy assumes that all worth-while reality can be grasped by the senses.

On the other hand, sound scientific theory leads from the visible phenomena to invisible realities which are their cause and which explain them. For example, we need only think of the role which mathematics plays in natural science: a mathematical formula is often the last word in the analysis of a material process. You can see the symbols in which a mathematical formula is written down, but you cannot *see* what it *means*. The meaning of the formula can be understood only by thought. In this way, thought discloses to us the inmost core of reality.

Social relationships in general cannot be fully grasped

by the senses. The meaning of "father" involves relations which, to their full extent, cannot be grasped by the ordinary senses. It is the most artificial of all procedures to analyse the idea of "father" in such a way that it appears as a sum of sight impressions, sound impressions, tactile impressions and so on. Bain tried to understand maternal love as a mixture of simple sensory gratifications, such as "warm" and "pleasant." No mother would agree with him, knowing that her love is something more than this.

The Marxist concept of class has been called a vague abstraction. It has been objected that a class, like the working class or the property-owners, cannot be seen, that we can see only individuals. The entire science of sociology is, however, in the same predicament, for it deals with social groups. And even the opponents of the class idea speak of the nation as a reality, and, because they cannot see it, they imagine it to be a spiritual entity. In actual fact a reality does not cease to be material when it can be disclosed only by thought, thought working on the basis of the sense impressions but going beyond them in finding relations which are not in the sense impressions.

The impersonal character of contradictions presents another difficulty. When in a previous book fascism was explained as a system of impersonal contradictions, held together by a "leader" and the necessities of the moment, a number of newspapers complained that the authors omitted the human element, that they treated the fascist movement too impersonally. This complaint only exemplifies the curious aversion for the scientific treatment of social and historical events.

History is made by men. Under certain circumstances, however, these men become the slaves of an objective necessity, which, curiously enough, they have themselves created. Under capitalism men have become the slaves of an economic process, of the products of their own labour and activity. The worker is the slave of the machine and the owner is the slave of his own wealth. Not a conscious plan governs the economic system, but the blind automatic mechanism of prices on the world market. We have become unable to govern our own social and economic development; on the contrary, we are governed by it. An event like the "cyclical crisis" is often called an "economic blizzard," to indicate that man's economic activities are outside the scope of his control. In our highly developed economic system a new destiny or fate has been imposed upon us. In spite of our great control of the forces of nature, this tyrant makes our future insecure and as dark as it has ever been.

We must now go beyond the facts of common observation to those highly abstract contradictions which account for them. It is a matter of common knowledge that capitalist production is impeded at certain times, usually at intervals of seven or ten years. During a time of "depression" or "crisis" production falls considerably. The last crisis was a particularly severe one, in fact the severest since 1847. It began at the end of 1929 and reached its lowest point in the middle of 1932. By then German industrial production had fallen, as compared with 1929, by 41 per cent; that of the U.S.A. by 52 per cent; whereas France lost only 35 per cent and Great Britain only 20 per cent.

"Producers' Goods," goods used in production (machines, tools, and everything connected with them) were struck hardest. In Germany they fell by 52 per cent, whereas consumers' goods fell by only 25 per cent; iron production declined 70 per cent and engineering 64 per cent. Similarly, in the U.S.A. production of iron and steel declined by 83 per cent. During a crisis machines and men are forced into idleness: in 1932 the factories produced only 60 per cent of what they technically might have produced, and, in the steel factories, only 25 per cent. Twenty-five millions of unemployed walked the streets of the world during the last crisis.

These well-known facts allow two possible explanations: capitalist production may be impeded either by external causes or by itself. Precapitalist crises—through famine, for example—were obviously due to external causes; production fell because a factor, external to human activity, such as the weather, went wrong. But, and this is a point on which practically everyone agrees, in capitalist crises production is impeded and hindered by itself. That is the same as saying that it contains a contradiction.

Let us now first see how goods are produced. The whole tendency of capitalism is progressively to render production more and more co-operative. This may seem a strange statement. It becomes quite obvious, however, if we compare the way in which goods are produced to-day with the way they were produced in, say, A.D. 1000. In those days each producer worked by himself, with only a few persons helping him at the most. He used tools and raw

materials which he had either manufactured himself or which were produced in the nearest neighbourhood. Co-operation was restricted to almost self-sufficient villages, each living a life of its own. To-day, in each factory, dozens or hundreds or thousands of workers and technicians co-operate, each working on his specialised task. A number of factories are united in trusts and combines. The banks centralise the capital of many trusts and factories in one hand. About 1928 Morgan's bank controlled between £20,000 and £40,000 millions.

The vast range of present-day co-operation is easily visible if we realise how many persons co-operate in the production of a single commodity, *e.g.*, a piece of chocolate. Workers grow and collect the cocoa in the West Indies and farm milk in Wiltshire; tin is produced in and transported from Malaya; trees are felled in Canada and the paper shipped to Britain; coal is hewn in South Wales or Durham, and electricity is produced in the big power-stations: iron-ore from Sweden, steel from Swansea, machines from Sheffield, ships from all the docks of the world have participated in the production of a piece of chocolate. In order to maintain the worker, wheat had to come from Canada, beef from South America, cotton and tobacco from Egypt and the U.S.A. Without exaggeration we can say that millions of workers and thousands of brains had to co-operate in order to make this piece of chocolate possible.

On the other hand, who owns the products of this co-operation? Because the means of production—factories, mines and land—although run by co-opera-

tive effort, are owned by private individuals, the products of co-operative labour are appropriated by private individuals. In consequence this world-wide co-operation is not guided by a world-wide plan; it is "anarchic co-operation," guided solely by each owner's desire for profit.

Both the co-operative production of goods and their private appropriation are essential features of capitalism, and the contradiction between them is responsible for the cyclical crisis.

The cyclical crisis, on the surface, is a crisis of relative over-production, is the result of a discrepancy between the producing power and the consuming power of society. The surplus of goods must be made good by producing less during the crisis. The decrease in production will devaluate capital, the rate of interest consequently falls. People become suspicious of long-term investments. In New York the market rate of discount was between 4 and 5 in 1928 and went down to 0.49 in the fourth quarter of 1932; in London, the market rate of discount for bankers' drafts was on the average 5.41 at the end of 1928 and 0.93 at the end of 1932.

When goods are produced, roughly half of the value goes to workers in form of wages and salaries, half of it goes to the owners.[1] The one-half which was paid in wages and salaries is almost entirely spent on consumers' goods; so is that part of the other half which is spent for the personal necessities of the owners and their friends. Money spent on consumers'

[1] See the figures collected by C. P. Dutt, *Fascism and Social Revolution*, p. 21.

goods is pure purchasing power, and some of the idle rich are aware of this when they say that they sacrifice themselves for the community by spending more on luxury goods. But the greater part of the profit and the small part of the wages and salaries which is "saved," is used for new investment in producers' goods. This second part is the source of all the trouble. At the first glance, of course, it cannot be. For money spent in investment and the purchase of industrial equipment is also purchasing power. It seems to be impossible for this discrepancy between purchasing and producing power ever to arise.

There are, however, two further points to be considered. To invest means to buy producers' goods. Producers' goods are worth nothing in themselves. Everybody can observe this in Lancashire. It was said that the lottery of the Manchester Royal Exchange for Christmas 1934 offered as the first prize a turkey, and as the second prize a Lancashire cotton-mill. Producers' goods are defined as goods the returns for which are postponed. They acquire value only when ultimately creating consumers' goods. No manufacturer will buy a soap-making machine (producers' goods) in order to admire its beauty or to study how it works. He buys it in order to produce soap (consumers' goods).

On the other hand, modern conditions of production enable each manufacturer to expand industrial production very rapidly. During the boom, the mechanism of competition compels the individual owner to take part in a race for expansion of production. It is not only that during prosperity he often over-estimates the possibilities of expansion; in spite

of better knowledge he is forced to hurry in order to get his share in the market, so long as the market lasts. The individual owners are thus each of them compelled to disregard the limits of purchasing power. Everybody, in his attempt to get a big share of the market at the expense of his competitor, helps to destroy his own market.

Why does purchasing power not increase in proportion with the increase in production? Why, with each commodity, is not also produced the power to buy it? The reason is that the entire system is built upon the poverty of the majority of the population. Two-thirds of the English population enjoy a yearly income of £25 per head. In India the average yearly income per person is only £6. During each boom, the purchasing power of the masses grows at a much slower pace than production. The very same cause which produces the rapid expansion of production, that is to say, the pressure of competition, keeps the wages down. During a boom, enterprise expands and wages rise. But so do prices and interest rates. Owing to the rising interest rates, the employer must resist further wage demands. (According to Professor Irving Fisher, from 1922 to 1929 the total mountain of debt in the U.S.A. increased by perhaps 35 per cent.) At the same time, the rise in prices diminishes the real wages; purchasing power cannot absorb the goods. As soon as the stage is reached at which the newly-acquired producers' goods pour enormous masses of consumers' goods on to the market, the glut of commodities becomes obvious. The demand for new producers' goods ceases, production

is slowed down, unemployment grows, wages are lowered, and purchasing power thus shrinks further still. The stocks of goods must be sold in order to pay interest and debts to the banks, prices collapse, and the crisis has come.

The workers cannot afford to buy back that part of the value of the products which has gone into profits. This is the basic condition of the crisis. That part of the national income which is appropriated as profit, for the most part purchases goods which ultimately produce goods for mass consumption. The capacity for mass consumption cannot, however, rise sufficiently. Under the whip of competition, each employer finds himself compelled to increase his profits. The race for profits leads to the continued introduction of new technical improvements which diminish the relative amount of work and wages in each product. Fewer and fewer workers produce more and more commodities. In Britain, between 1923 and 1928, production rose by 7.6 per cent and employment fell by 5.6 per cent. Between 1924 and 1933, output per man in steel smelting, iron puddling, etc., rose by 40 per cent, and in cotton by 18 per cent. In the U.S.A., factory output between 1919 and 1927 rose by 16 per cent, whereas employment fell by 10 per cent. Increased production would bring no harm if wages would go up and prices down correspondingly. But then, there would be no incentive to technical improvement because it could yield no extra profit. Each employer introduces technical improvements only in order to raise profits as compared with the wages. After some time, an enormous capacity to

produce is built upon a small capacity to consume, and the whole building must collapse.

Under private ownership of the means of production, it is just the width of co-operation which renders the crisis more severe. It leads to monopoly trusts. It is easier for a combine to keep prices high than for a number of small competing firms. In Germany, in 1933, the products of non-cartelised goods had fallen by 55 per cent, whereas the prices for cartelised goods fell only by 20 per cent. In this way the process of selling the surplus goods is prolonged. Progressive capitalist co-operation further leads to large-scale production which works with fixed overhead charges. These are interests, amortisation, etc. They remain the same, whether the factory works at full capacity or not. In a depression, the turnover shrinks. Take the following as an example. As long as the factory works at full capacity, it turns out, say 100,000 shoes a day; the fixed charges are, say, 2s. on each shoe. If the output falls back to 50,000 shoes, the fixed charges will be 4s. on each shoe; if to 25,000, they will be 8s. on each shoe. The necessity of restricting production within existing plants presents a very real problem. 200 out of the 1,375 boot and shoe factories in the U.S.A., if they worked full time, could have satisfied the entire existing demand in 1931—of course, not the real demand, but the demand which can afford the price.

Finally, the growing organisation of production on a national scale tends to enclose the nations within tariff walls. Tariffs impede international trade. They also raise internal prices and thus lower the purchasing

power of the masses. Owing to tariffs, both the internal and external markets shrink, and world recovery is postponed. But tariffs are not the result of a whim of irresponsible persons, but the necessary consequence of production organising itself more and more on a national scale.

Imperialism and War

The cyclical crisis is only one of the more spectacular forms in which the basic contradiction of capitalism expresses itself. This contradiction operates continuously, not at intervals. The pressure of surplus goods is felt continually. It drives each country to expand its market beyond its borders. This tendency is called imperialism, the main aim of modern foreign policy since the full development of modern productive forces, since 1880. Capital, which cannot be favourably invested at home, is invested abroad.[1]

Imperialism again leads to wars which ultimately decide the division of the markets between the great capitalist powers. During a war, incidentally, the surplus goods and the surplus men are blown up together; their pressure is for the time being removed. Many are inclined to regard wars as abnormal and unaccountable incidents, as catastrophes of the same nature as earthquakes, or as queer manifestations of the wrath of God. As a necessary consequence of the

[1] Foreign investments in millions of £s:

	1900	1913	1929—30	
U.S.A.		980	3770	+285%
England	2000	4160	6412	+ 45%
England to Empire		1860	3367	

contradiction essential to capitalism, they are an essential, inevitable and ever-recurring feature of the capitalist system. Statesmen, in their words, deny the necessity of further wars, disproving their own words by their own actions, in feverish preparations for new wars.

The basic contradiction of capitalism is at the root of the political unrest of our time. We cannot understand one single political event without seeing its sinister features in the background. The one problem of our time, a problem which worries Hitler as well as Baldwin, Roosevelt as well as Mussolini, is the problem of how to adjust purchasing power to producing power.

In three different ways, different people propose to crack this hard nut. Either the private ownership of the means of production goes and is replaced by the common ownership and democratic control of the means by which we live; this socialist solution attempts to raise consumption by removing the barriers which private ownership imposes upon it. Others prefer to retain private ownership and to reduce production; their idea being to split up the vast co-operation of modern industry into smaller, self-sufficient units and to replace machinery by handicraft. Ruskin proposed this solution long ago; in the U.S.A., the Hearst papers, and W. T. Bryan carried it into the population; fascist theoreticians play with the idea, although the necessities of war preparation prevent them from putting it seriously into practice.

The most immediate solution, though only a temporary remedy at that, is preparation for war. War

preparation is the deliberate policy adopted now by the Governments of three countries, Japan, Germany and Italy. War may relieve the pressure of surplus goods by the acquisition of new markets at the expense of other people. The preparation for war already creates an artificial demand for war materials and thus helps to expand consuming power.

In short, to study current affairs without a knowledge of the contradiction which moves history on, is like trying to understand a steam engine without taking account of the vaporisation of the water.

CHAPTER XIII

CONTRADICTIONS IN SOCIAL LIFE

IF contradictions are the cause of movement and development, they must abound everywhere. For everything moves and develops continually. It is therefore surprising that so little is heard of them. Contradictions are like microbes, all around us, existing undiscovered for centuries. Although nothing can be free from contradictions, the recognition of contradictions in *nature* runs counter to all the habits of modern science. But since this book is exclusively devoted to illustrating certain aspects of scientific method by examples drawn from the social sciences, I must postpone the discussion of contradictions in nature to another occasion.

In the sphere of politics we move from one contradiction to the other. Contradictory situations constantly confront us. At each new step we are faced with two mutually exclusive, but equally inescapable necessities. Political action has the task of solving these contradictions.

The foreign policy of the U.S.A. is in a contradictory position in relation to Japan and Russia; on the one hand, the U.S.A. desire to give to Japan an outlet in the U.S.S.R., and so to deviate the course of Japanese expansion from herself, whilst on the other hand, she fears that Japan might become too strong by a victory.

For another example: after 1923 the Russian Communists had to face two conflicting necessities—they needed a strong International to keep the capitalists from their frontiers, and they had also to build a strong Russia as a firm centre of the world revolution and a model for foreign communism. The demands of their national and their international policy clashed; we cannot explain here how they tried to square the circle. German fascism, on the one hand, is compelled to lower the standard of living of its workers so as to finance frantic rearmament; on the other hand, she must make concessions to the workers and win their support, since otherwise, if she is ready for war she will have the arms but nobody willing to fight with them.

The working-class movement everywhere is torn by the contradictions between reformism and socialism.[1] The desire for socialism is the product of discontent. In order to secure followers, however, it is necessary for socialist parties to bait their hooks with concessions obtained within the capitalist system, thus reducing the discontent upon which alone socialism can thrive. In this way the mass parties of the workers are reformist and not socialist. The socialist parties, on the other hand, are not mass parties but small sects.

Good and Bad Contradictions

Contradictions, as we have said, abound everywhere and we cannot escape them. We can only move from one to the other. However, they are not all on the

[1]See E. Wilkinson and E. Conzé: *Why Fascism?* p. 236 *ff.*

same level. In society, we have to distinguish between desirable and undesirable, between predominantly creative and predominantly wasteful contradictions.

The contradiction of capitalism has become more and more predominantly wasteful. The cyclical crisis, one of its effects, is predominantly undesirable. Something, of course, can be said in its favour; it has its good aspects, for it stimulates technical progress. From the standpoint of the system, it has the advantage that it creates a reservoir of surplus workers, and the pressure of the unemployed allows wages to be reduced and renders the workers more submissive. This is an advantage to the owner. Small producers are ruined; the ensuing concentration of capital increases the productivity of labour. One of the professorial apologists of the capitalist system summarises these considerations in the cynical exclamation: "Therefore, benefit and still more benefit comes to capitalism from the existence of the trade cycle."

From the standpoint of the majority of the population things look different. Insecurity and fear of the future is theirs. They are poor and take no delight in the enormous destruction of goods which accompanies a crisis. Through the enforced idleness of machines, men and raw materials, they cannot obtain the goods they need. Unemployment demoralises the workers; so also the fear of unemployment. Rationalised work in the modern factory cripples the personality of the worker. Lack of work and excess of idle luxury transform the personalities of many, especially the female, members of the richer classes into wretched bundles of boredom.

Wars are almost entirely wasteful. It is true that they further technical progress. The last war, for example, produced in four years a development in aeronautics which would have required twenty years of peace-time to achieve. But this is a minor detail in the gigantic waste of goods and men. Enormous sums are to-day wasted in war preparation; the expenditure on armaments grows everywhere year by year. And more arms mean worse houses, fewer clothes, less food.

There are some who gain consolation from the discovery of the contradictions of capitalism, because they believe that it must die from their effects. Contradictions, however, create instability, but they are not necessarily followed by collapse. At the expense of the working population the property-owners can usually find an escape. We cannot wait for the collapse of capitalism; capitalism can be replaced by a better system only through the conscious efforts of many people for a more rational system of society.

The contradiction of capitalism has reached a high stage of absurdity. The miner's son may ask: "Mother, why is it so cold?" And his mother must answer: "Because we have no coal; father is unemployed and cannot buy it." "And why is he unemployed?" "Because there is too much coal."

This absurdity of poverty in the midst of plenty, of waste in the midst of abject misery, has begun to startle public opinion throughout the world, but many benevolent observers have not yet seen that it is the result of a deep-hidden contradiction which compels one class of society to work against the other. By raising its profits at the expense of wages, it creates

disaster for society as a whole. As Moses saw the promised land, we are to-day within view of a society which extends co-operation also to the ownership of the means of production.

Socialist society will have its contradictions also. For example, its planned economy must take into account the demands of the consumer, but the plan must look five or ten or fifteen years ahead, and the needs and tastes of the consumer vary unaccountably and no one can foresee them. Yet this contradiction can be solved practically, and the waste of unsaleable products which it will create will be infinitesimal as compared with the waste of products in capitalist crises. The contradictions of a socialist society will be the contradictions of healthy growth; the contradictions under which we are labouring to-day have become the contradictions of decay.

CHAPTER XIV

THE UNITY OF THEORY AND PRACTICE

THE "unity of theory and practice" is the oldest and proudest war-horse in the stable of dialectical materialism. When in his early years Marx recognised its importance, he finally ceased to be a mere Hegelian and laid the first stone of his new method. No adequate survey of scientific method can omit discussion of this point. As usual it has suffered more from its friends than from its opponents. Ardent young communists take it to mean that we should all immediately join the Communist Party.

The unity of theory and practice, the continual interaction between the theoretical and the practical aspects of human activity, is so much a self-evident commonplace that even professional philosophers have come gradually to accept it under the names of "pragmatism," "humanism," "instrumentalism," or "philosophy of life." There would be no reason to state this aspect of scientific method so explicitly were it not for the opposition to it from two entirely different quarters.

The average practical man sums up his attitude to the problem in the remark: "That's quite good in theory, but wrong in practice." Many people are so resigned to the impotence of reason that they are no longer disturbed when someone says one thing and

does another. Among Christians the conflict between theory and practice is one of the most common events in their everyday life, and the attraction of Christianity as a faith has gained as much as it has suffered from this convenient fact.

Scientific and artistic circles often endeavour to live in an ivory castle of their own, aloof from the multitude and their practical needs and aspirations. Philosophers are inclined to assume that theories are evolved by disembodied spirits, by a disinterested reason, independent of material interests and impulses; they are shocked to hear that theories are the reflection of the material conflicts of everyday society. They are inclined to believe that utility degrades knowledge, that theory is polluted by being brought into touch with everyday practical affairs. Passive contemplation is their highest value and virtue.

This wrong perspective of things is rendered possible by the extent to which our society has developed the division of labour. One group of individuals does the intellectual, another does the physical work. One group may easily forget that both kinds of work have sprung from the different needs of the same society and that the opposition is not an absolute one. As Bukharin expresses it: "Like every division of labour, here too is a living *unity* of opposites. Action drives forward cognition. Both theory and practice are *steps* in the joint process of the 'reproduction of social

In order to understand the full meaning of the unity of theory and practice, we must shift the discussion from the plane of individual and private to that of

social and collective practice. Then at once it loses the character of a commonplace. It arouses the resentment of just that part of the public that reads books. For the readers of a nation are more fond of regarding themselves as individuals than as members of a social group. Man, however, can be defined as an animal working in society. Only in society can the highest potentialities of human nature be realised. It is with an eye to the social and collective aspects of practice that we shall now proceed to discuss some of the more important sides of the very complex unity between theory and practice.

Ultimately we can distinguish between truth and error only by applying a theory practically, as a tool in overcoming a concrete difficulty in reality. If we apply a theory successfully, we can assume that it is predominantly correct. Only science which has withstood the test of practice can claim any degree of certainty for its results. The proof of the pudding, in fact, is in the eating. Lenin says that man's thinking is true if it correctly reflects objective reality; "the criterion of this correctness is practice, experiment, industry." Our physical theorems are highly probable because our bridges usually do not collapse, our railways are running, our ships do not sink. Our chemistry is largely correct because aspirin does cure a headache, and poison gas actually does kill many people. The theories of Freud have a certain element of truth in them, for they heal a certain number of cases of mental disorder; they cannot be completely true, for many other cases are not cured by psycho-analytical methods.

Theories attempt to reflect reality as it is; the last word concerning them must be reality itself, reality as we experience it when we try to mould it practically. As long as we disregard practice, we have only one standard for the truth of theories: they are true if they are consistent. Yet, much nonsense is consistent. Our lunatic asylums abound in persons suffering from what is called "paranoia." Such persons evolve marvellously consistent systems on the basis of the assumption, for instance, that the moon is a green cheese. Milder cases of this kind can be frequently observed outside the asylums. Anti-semites and "credit cranks" are usually affected by this form of consistency which disregards the claims of reality. This "green-cheese" type of thinking can be quite wholesome and entertaining for the individual person; it is because in severe cases it too obviously does not fit in with the social practice of the community that the person is removed into an asylum.

We can only discover whether the fundamental assumptions of a theory are sound and true, if the community applies the conclusions practically and sees whether they work. Modern industry is a gigantic effort at putting theories into social practice. Experiments also are a form of social verification. Only if an experiment can be repeated by all persons with the same results is it regarded as conclusive; and so long as it is performed and performable only by one man it is regarded with suspicion.

Secondly, theories, if they wish to meet with a certain degree of success, must help society in carrying through its practical tasks. They must serve as a

justification for the demands of social groups and help them in the realisation of their practical demands.

This is quite obvious in the social sciences. We all know those people who, however "impartial," "unbiased," or "objective" they may think themselves at the beginning, always arrive, "driven by the facts," at a justification of private profit and the present state of affairs. On the other hand, however "impartially and objectively" the facts may be examined by one who is discontented with the present system that person will always be confirmed in his condemnation. There is much cant concerning the objectivity of social science; in fact, everyone of whom I have ever heard first knew what he wanted and then proved it. It is a universal fact that each social group manages to evolve the social theories which suit its demands and its practical interests. The Rotarians are scarcely in agreement with the population of Poplar on any important issue. Nor are the theoreticians an exception. If the country wants free trade, economists have no difficulty in proving that it is necessary; if the country wants tariffs, "objective science" comes "more and more" to the conclusion that tariffs are necessary. Those occasional Don Quixotes who voice the interests of a former generation are no proof to the contrary.

To a certain extent, at least, this holds good also for natural science. The Greeks, if any people, had the brains to develop it, but their theoreticians received no encouragement from a society which had slaves in plenty and no need for labour-saving machines. So the efforts of Archimedes and Pappus remained

abortive. But there is no need for me to go on proving the influence of social practice on scientific research. In his recent book on *Scientific Research and Social Needs*, Julian Huxley has so extensively and admirably demonstrated the process of interaction between social needs and scientific problems and solutions, that I can refer the reader to his investigations. It would be useful to have a similar book on social science.

Thirdly, theory should enlighten practice. This demand must reckon with the contemptuous attitude which the average practical man professes to have for theories. He despises theories as useful only for bookworms, as quite out of place in practical life. Leg-theory is the only theory with which he is concerned.

It is, therefore, on the theoretician himself that the burden is thrust of showing the value of theories. The hymns of praise that philosophers have sung to theoretical knowledge during the centuries taste somewhat of the spirit in which Earl Iveagh speaks of the virtues of Guinness and Sir Herbert Austin of British-made cars.

Now by joining in the chorus of praise for absolute theory we would be disregarding the first law of our own method. It is quite obvious that the value, the social value, of theory is varying, is subject to historical modifications. During long periods of his history, man's actions have been guided by traditions, precedent and custom. This guide breaks down only if society is subjected to quick and radical changes; then tradition fails to lead anywhere, as we saw in the case of psychology (p. 56) and of the great turning-points in history (p. 119).

The same applies to the social problems of the present time: there exists no predecent which might help us to solve them. So much wealth and power was never before in our hands. Never before have we had to worry that each industrial nation by itself alone is able to satisfy the world's need for goods. We must use our brains. Only by consciously reconstructing society can we hope to solve the new problems without disaster. Those who despise theory in such a time seek to act unconsciously, like a wood-worm in the wood. But the wood-worm does not care particularly where he arrives, while for us everything depends on our direction, and only theory can reveal to us the direction in which we are moving. Only by theory can we understand the events we wish to master; only by collective action based on such theory can we hope to solve them.

Finally, a theory without practical realisation and consequences would be like a knife which gets lost before being used.

Again, we must beware of taking science out of the flow of historical change. We have said repeatedly that it is the task of science to master the world about us. Yet it is only for about six centuries that scientific research has been carried on consciously with that end in view. For long this conception of science was confined to the countries of Western Europe. It has now spread over the whole world, together with the machines and battleships of the Western countries. We should not lose sight of those other historical periods in which persons were prompted by other motives to acquire knowledge and to search for truth.

Two main motives stand out among the rest. The gentleman of ancient Greece studied with the sole purpose of perfecting, of widening, of adorning, of educating and of purifying his own individual mind. Greek science, evolved on this basis, is not inferior to ours in perspicacity and perhaps truth. But it is useless for our different aims and ends.

The second of these two motives for seeking knowledge stands in direct antagonism to the spirit of "scientific method." Thought is pursued in order to find a way of escape from this world, by which a man can find salvation for his soul. This line of approach underlies the tenets of Buddhism, and to a certain extent those of the European Middle Ages.

I know of no authority that can tell us which of these goals of knowledge might be best. Our personal choice will be largely a matter of taste and inclination, and economic circumstances. It is only when we choose the way of control that scientific method, as outlined in this book, can mean anything to us.

It has been said that it is difficult to understand Jesus Christ if you have £10,000 a year. People misunderstand his views because they are unwilling to meet him on the practical plane of a common purpose. They are unwilling to leave their treasures behind, to face thirty days in a desert, to mix with drug-merchants and to have no place to lay their heads. That is why they have persistently twisted his teachings to meet their own ends.

So also, only a common agreement as to the basic practical question of purpose can lead to a deeper understanding of scientific method. Without an active

desire for a rational system of society, scientific knowledge cannot become a living knowledge. Our eyes are opened only while we carry on, together with others, practical work which aims at bringing rational society into existence. Scientific method remains dead and sterile without the continual interaction with experiences which can only be gathered in practice. This demand may seem too severe. But there is no special way to science even for kings, as Thales of Miletos remarked. Scientific thought is not something to be played with. Without the backing of rational activity it becomes a mere play of words, or a cheap but fruitless entertainment for an idle hour.